Elementary School Curriculum

FOURTH AND FIFTH YEARS

Reprinted from Teachers College Record
January, 1907

PUBLISHED BY
TEACHERS COLLEGE
COLUMBIA UNIVERSITY
NEW YORK

Teachers College Record

Edited by James E. Russell

TEACHERS COLLEGE RECORD is a serial publ
by Teachers College, Columbia University, for the
presenting to students of Education, and to the pub
ally, a comprehensive view of the history and princi
education, of educational administration, and of the theory
practice of teaching as advocated and followed by Teache
College and its schools of observation and practice.

ANNOUNCEMENT OF VOLUME VIII., 1907

Continuing the present series of articles, the May number will complete the outline of the Curriculum of the Horace Mann Elementary School by describing the work of the sixth and seventh grades. The RECORD will also issue during the year a number under the direction of Professor Dow on "The Teaching of Fine Arts" and one by Professor Johnson on "Methods of Teaching History."

Published bi-monthly, except July. Subscription price, $1.00 per annum; single numbers, 30 cents; postage prepaid; on 5 or more copies a discount of 20 % is granted. All subscriptions begin with the current number. Back numbers will be supplied on request, at the above rates. A list of the numbers already issued will be found on the last advertising page of this issue. Advertising rates given on application.

Address all communications to **Teachers College Record**

Teachers College, Columbia University, New York City

CONTENTS

GRADE IV

GRADE V

INTRODUCTORY STATEMENT.

This reprint from the *Teachers College Record* is the third of a series that describes the work of the various grades of the Horace Mann Elementary School as it is now carried on. The first number of this series on the work of the first grade appeared in January, 1906[1]; the second in September, 1906; the fourth number, describing the work of the sixth and seventh grades, will appear in May, 1907.

In the first number of this series the point of view of the Horace Mann School on certain phases of elementary education was briefly stated in an article entitled "Controlling Ideas of the Horace Mann Elementary School," where were considered such topics as The Meaning and Aim of Education, Moral Education, Interest, Nature of the Recitation, Correlation, Nature of the Child, and School Life. This article is, therefore, an introduction to this series, but is not reprinted in this number.

This number has been prepared by the teachers of the fourth and fifth grades with the assistance of an advisory committee

Fourth Grade Teachers:

Ida E. Robbins — Florence M. Marshall

Fifth Grade Teachers:

Mary G. Peabody — Laura B. Underhill

Lucy Dickson

Special Teachers:

Lucy H. Weiser, Manual Training
Ethelwyn Miller, Art
Elizabeth R. Fotheringham, Gymnasium
Helen Latham, Music

Advisory Committee:

Henry C. Pearson, A.B , Principal
Frank M. McMurry, Ph.D., Teachers College
Mary F. Kirchwey, Sixth Grade Teacher

[1] Reprinted as separate pamphlets, price fifty cents each.

Cast of "The Minotaur," an original play by children of the fifth grade. See pages 58 and 61.

Elementary School Curriculum

FOURTH AND FIFTH YEARS

THE CURRICULUM OF THE HORACE MANN ELEMENTARY SCHOOL

READING AND LITERATURE

Grade IV

When the average child of eight or nine enters the fourth grade of the Horace Mann School, he has mastered the ordinary formal elements of reading, has read much and is eagerly demanding "more books to read." It remains, then, to help him to greater speed and accuracy in silent reading, to increase his desire and power to give pleasure to others by oral reading, to give him only that which is best in form and content, and so to help develop in him a taste and feeling which shall reject the trashy, or worse than trashy, books which are constantly thrown in his way.

It is not easy to find plenty of material which answers all these demands. The long story or poem is most often used, because it sustains the interest and frequently makes the most lasting impression on the memory. Kingsley's *Water-Babies* may be read first, because the vocabulary is not too difficult; the majority of the children delight in its mingling of common and marvellous things; the ethical element is strong, but never forced beyond the point where the child's warmest sympathy goes out to "Tom" and his animal friends; the spirit of play and adventure holds the interest throughout, and the conversational form calls for animated and natural reading. We use

the Stickney arrangement published by Ginn & Co., because it omits the long, scientific passages which tire children, and also gives excellent foot-notes and illustrations.

At this age children are intensely interested in animal life and adventure. W. J. Long's *Beasts of the Field* gives some fine animal stories in which most of the statements are not beyond human belief and observation. As each story is read, "Br'er Rab," "Meeko," the squirrel, and "Tookhees," the "fraid" little mouse, live with us in the schoolroom and are watched and fed by the children. "Br'er Bar," the deer, and the beaver are visited in Bronx Park.

Ruskin's *The King of the Golden River*, Baker and Carpenter's *The Fourth Year Language Reader*, and many history stories may be taken if time permits.

The last two months of the school year are usually given to Scott's *Lady of the Lake*. Objections are often made by outsiders that it is much too difficult, but experience proves this false. It is so vividly picturesque, so full of rapid movement and adventure, and so really simple in plot, that there is hardly a child who does not become enthusiastic in the work. We have had many cases of children who, formerly indifferent or timid readers, became the good readers of the class through being filled with the dramatic spirit and rhythm of the poem. Often little boys who "hate poetry" finally say: "Oh well, this is n't like other poetry."

Other poems are read or memorized, such as *Birds of Killingworth*, *The Bell of Atri*, *The Wreck of the Hesperus*, *The Pied Piper of Hamlin*, and various Christmas carols.

Once a week, or oftener if time can be saved for it, the teacher reads aloud such stories as "The White Seal" and "Quigueru" from the *Jungle Books*, when studying in geography about the Arctic regions; or the *Uncle Remus Stories* by Harris, when studying the colonial history of the South.

The last half of the year we have a class library which is thoroughly enjoyed by the children. It is made up entirely of books loaned by the children and teacher. To be admitted to this limited collection, a book must be very excellent from a general literary standpoint, or fairly good when it relates to such class subjects as history, geography, and nature.

When a new poem or passage such as the first and second

stanzas of *The Lady of the Lake* is given to the class, the teacher often reads it aloud first, after which the children volunteer to read it. The class is encouraged to ask questions, and when it seems good to have the teacher ask questions, she may ask such as these: "In what kind of a country is this hunt? Name all the things which are moving. Close your eyes and *see* the pictures. What colors do you see? What sounds do you hear? Read aloud the lines which have sound in them. Read the lines which tell us the time of day."

In *The Lady of the Lake* there are frequent stanzas which it is best for the teacher to read, letting the class follow in their books; or she may give the substance in her own words, letting the children comment and ask questions. We do this with all of Canto III ("The Gathering"). This keeps up the interest while saving time for more intense study of "The Combat," where the children linger over every word, and consciously or unconsciously memorize fine couplets or whole stanzas. It is easy to get good dramatization work here. Often the boys will voluntarily memorize "Fitz James'" or "Roderick Dhu's" part that they may more freely give such lines as these:

"Come one, come all, this rock shall fly
From its firm base as soon as I."

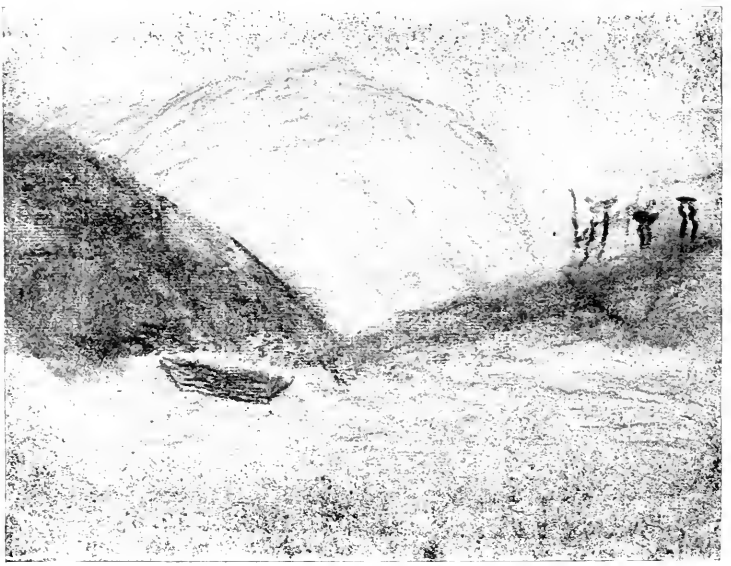
or

"These are Clan Alpine's warriors true,
And, stranger, I am Roderick Dhu."

Then comes a time when they attempt original illustration in charcoal, and frequently we get them as good as those figured on the following page. We have a few fine photographs of *The Lady of the Lake* country which the children compare with their own sketches, and often they bring second efforts which they have made at home.

In every class of thirty children there will be poor readers. These are given a choice of favorite stanzas to be prepared at home and the next day read to classmates. In no other way can they take much active part in the oral reading of difficult material. We have much silent reading and often the oral reproduction in the child's own words, but not where it might detract from the impression made by beautiful English. Often a child can express the idea he has gained most clearly by a quick

Charcoal sketch to illustrate "The Lady of the Lake"



Charcoal sketch to illustrate "The Lady of the Lake"

sketch on the blackboard, which he is always encouraged to do. Long's story of *The Beaver*, where the three kinds of dams are described, gives such an opportunity; and in the manual work one or more of the varieties are often made. A large blackboard is given up to the class Here the children may draw "Tom and the Lobster," "South-west Wind, Esquire," whole rows of prankish bunnies, or fishing smacks, as their latest interest dictates.

At the first of the year an estimate of the class taste in poetry may be obtained by letting each child memorize and give a favorite poem in the recitation period which comes once a week. Most of such choices are fine, but occasionally a child prefers only the comic, and declares Mackay's *Miller of Dee* "stupid," or Stevenson's *Winter-time* "silly." The class choice is against him, however, and gradually he comes to do better, though he may never make a poet. This recitation hour on Friday is welcomed with glee. It furnishes a chance to review old favorites of past years, as well as to make new friends. The class library also gives good training. So far as possible the children decide what books shall be admitted to it, but the teacher must have the final verdict. A librarian is elected by ballot. It is understood that this child must be a regular attendant, a good writer, and a careful handler of books. He or she must keep a record of the library list, the books drawn, and the time of their return. Although this is a somewhat laborious position, as all the work must be done before school in the morning, there are few who will not seek the honor.

It always seems hard to tear ourselves away from the joys of reading to give time to the more formal work, but this we do. The drill in phonetics is continued, and many enunciation exercises are given from such things as dear "Mother Goose" and familiar proverbs and comparisons. For example,

"Haste makes waste."
"Handsome is that handsome does."
"Birds of a feather flock together."

or

"As fierce as a tiger."
"As blind as a bat."
"As greedy as a pig."

These are sometimes given as whispering exercises. Many a merry laugh results, but seldom are our feelings hurt. Little direct voice culture is given outside of the singing class. In extremely bad cases we give special work.

When at the end of the year's work we often feel much dissatisfaction with the children's efforts, we must seek comfort in a backward look. Then we realize that they have gained in power to get and give pleasure, that they have become better critics of books, and therefore have strengthened their small armors against much which might injure them in later years.

I. E. R.

LANGUAGE

Grade IV

The class of children who make up the greater part of the Horace Mann School naturally do good English work where imagination and general information are needed. Perhaps it is partly due to this very blessing that they incline to ignore the formal side of their written work. Our problem, then, is to strike the happy medium of encouraging and developing all natural talent, while we also train them to write, spell, punctuate and form sentences.

Spelling. The children are given lists of classified words to be spelled orally. In all oral spelling careful division into syllables is very helpful, but we seldom require it in written work where it leads to broken and slow writing. We take pages of unclassified words and let the children group them according to prefixes, suffixes, vowel sounds, silent letters, of rhyming words. The habit of quick observation and the practice of always studying the correct form first and then reproducing it are the secret of good spelling; and this habit we try to form in every possible way. In working with word meanings, or common homonyms the children study the correct sentence form first, then work with given sentences where they may fill in blanks with the right word. After the necessary study, the dictation exercise of words, related sentences, a fable, or a stanza of poetry is the daily test; but even better than this is the writing from memory of a part or the whole of a poem which has been memorized, because here there can be no temptation to make guesses.

Sentence Study and General Punctuation. The form and use of the statement, question, command, and exclamation are dwelt upon, and in this work we include common punctuation, and use of capitals. Such lessons as the following are based on previous reading:

Possession and the Apostrophe.

Find three apostrophes in the following sentences:

1. The robins' nest is in John's pear tree.
2. Where is the oriole's nest?

The words containing the apostrophes show what? Who owns the nests? The pear tree?

Written Exercise.

I.

Copy the following sentences:

1. Beavers have flat tails.
2. The otter has thick fur.
3. A weasel has sharp teeth.
4. Rabbits have teeth like chisels.

Change and write these sentences so that beavers, otter weasel, and rabbits show the ownership.

II.

In the "Legend of St. Christopher" find and copy all the words which show possession. Use these words in sentence, of your own. Be sure you use the apostrophe correctly.

Often the children enjoy copying from the blackboard an unpunctuated paragraph or stanza of poetry, punctuating it as they think best, comparing their work with the correct form and changing theirs where necessary.

Composition. In this grade we still have oral work precede most of the written composition, but the children write much more than formerly. Early in the year they delight in giving stories of vacation adventures, or they reproduce in their own words a story which the teacher has told. An occasional imaginary conversation in fable form between such folk as a dog and a squirrel, a fox and a hen, or a bat and an owl, is enjoyed by the children. A story based on a picture, poem, or imaginary experience appeals to children with lively imaginations, while others can do their best work in reporting an excursion or a lesson in geography or history. All such work is corrected by the teacher and children, and frequently read

to the class for criticism on such topics as clear sentences and good topical arrangement.

The simple outlining which was begun in the third grade is carried on more systematically here. A topic in a history or geography lesson furnishes an easy basis for outlining; later we may together work out a simple outline for a composition, but rarely ever write from it, as it leads with such young children to stilted work.

We have frequent letter-writing. Such model letters as Phillips Brooks, Charles Kingsley, or Lewis Carroll wrote to children are studied in order to inspire them to rise above the commonplace things which they most often write. In the same way we study some clever diary, after which each child keeps one at home for a week, then shares it with his class, provided he is willing.

It is most interesting to note how the reading of such English as *Water Babies* or *King of the Golden River* influences the style of the imitative child. The following is an illustration:

A Story of a Stream.

I am a Stream. I was very small in the mountains; and the brook trout jumped and splashed, and the otter glided in and out after the fish, and went up into the hole in the bank wiht a fish that he had just caught.

The squirrels came and quenched their thirst and ran back to their homes in the trees.

Sometimes I saw the bunnies coming down to frisk and play, and in some places I was so narrow they could jump over me.

Then a lot of small streams flowed into me; and I grew to be a small river. There were forests along the mountain slopes here and there. These were of great pines and other evergreens, and in open places I could see down upon the plains with herds of cattle and ranch houses dotted over them.

Sometimes I flowed through villages where there were bridges across me.

It is getting very cold now; and my sides are freezing and the ice gets nearer to the middle of me.

Now in December I am frozen all over, and people are skating and sliding and they are having to clean snow off me and are

making roads across me for the sleighs to cross while I am gurgling along underneath.

Back in the mountains the squirrels and all the other animals are asleep and the little fish have to get into the deepest holes.

The children delight in feeling that their finest work may be published in *School Days*, the monthly magazine which is entirely devoted to their writings. It encourages original puzzles and illustrations, and furnishes the most practical incentive to their best effort.

I. E. R.

PENMANSHIP

Grades IV and V

The article on penmanship in the Teachers College Record for September, 1906, applies so fully to Grades IV and V that little more need be said. We work along the same lines for interest, effort, good sitting position, pen-holding, form of letters, uniform size, neatness, and arrangement of work. In these grades we begin to work for speed so far as is possible without sacrificing other essential qualities of good penmanship. Sometimes the pencil is used for drill where we are working for easy movement alone, but the bulk of our written work must be done with pen and ink.

No regular period on the program is assigned to penmanship in grades above the fifth. By insisting upon care in every detail of the written work, and by giving individual attention to poor writers we obtain the result at which we aim—a neat, legible, and practical style.

ARITHMETIC

Grade IV

This article contains an outline of the arithmetic work of the fourth grade with several suggestions as to the methods of presentation.

The emphasis of the year is placed upon the fundamental operations of addition, subtraction, multiplication, and division. Although the principles of these operations have been taught in the preceding grades, it should be remembered that constant drill is necessary to give the child ability to handle rapidly and accurately these operations in general problems. At the same time much variety in method is planned to keep the child from losing interest.

In oral drill Card No. 7 (Boston School Supply) is occasionally used, as it contains all the necessary combinations. A five-minute brisk review, with emphasis on multiplication and addition, these being the operations most used in practical life, is a great help in securing the important qualities of rapidity and accuracy in the written work.

In the daily thirty-minute periods one half of the time is given to oral and the other to written work. As in the preceding year, a text-book is considered necessary and Smith's *Primary Arithmetic* is used. The ground covered extends from pages 129 to 222 inclusive.

The Outline is as follows:

Review. The first month of school is devoted to a careful and systematic review of the third grade work.

Notation and Numeration. Numbers as far as billions are used and written, but the drill is chiefly on numbers below one million.

Counting. The counting of the lower grades is carried on as required for completing the multiplication tables to 10×10 and as an aid in addition.

Addition and Subtraction. In the quick oral work "carrying" is involved. The written work consists of four or more orders including dollars and cents. In subtraction the addition plan or "Austrian method" is used, and the general steps which were developed in the preceding grade are reviewed.

Multiplication and Division. Oral. The tables are reviewed and completed, and numbers of two and three orders are multiplied and divided by numbers of one. Numbers below 50 are separated into factors. Multipliers of three orders are used in written work, and in division special attention is paid to proofs.

Measurements. Long and square measures are developed, distances between well-known places, dimensions and areas of rooms and garden plots are found. Diagrams are used.

Problems. The problems are simple, and involve the use of U. S. money, the common purchases of a family, and the common occupations.

Suggestions as to Methods

The principal feature of the year is a thorough understanding of long division, and accuracy and rapidity are insisted upon. A child enters the fourth grade with an understanding of the process of short division, and as long division involves no new principles a divisor of two or three figures presents no new difficulties. Nevertheless, the successive steps for explaining short and long division are given to the child, but formal explanations are not required of him, as in the written work the short form is used. When a class is beginning work in long division, the problem should never be difficult enough to divert the pupil's mind from the process he is trying to learn; thus the divisors 21, 31, 41, etc., are used at first, and 102, 201, 402 for three-figure divisors, for the reason that they are almost always contained in the dividend as many times as their first figures are contained in the first figure or figures of the dividend, and the work becomes very simple.

The complete process developed by the teacher for the following problem is:

We see that 6000 ÷ 21 = no thousands but that 6700 ÷ 21 = 300 and 400 + 41 remaining to be divided; 441 ÷ 21 = 20 and 21 still remaining to be divided; 21 ÷ 21 = 1. Therefore the quotient is 321.

```
  321
21)6741
  6300  = 300 × 21
   441    still to be divided
   420  = 20 × 21
    21    still to be divided
    21  = 1 × 21
```

Short form used by the pupil:

```
  321
21)6741
  63
   44
   42
    21
    21
```

In multiplication the explanation for the following problem is made by the teacher in this way:

We might multiply the units, tens, hundred, etc., separately, and add the products; but that takes too much time, so we say 9 × 6 are 54 (writing 4); 9 × 4 (tens) are 36 (tens) and 36 and 5 are 41 (writing 1); 9 × 8 (hundreds) are 72 (hundreds) and 72 and 4 are 76 (writing 6); 9 × 7 (thousands) are 63 (thousands) and 63 and 7 are 70.

```
 7846
 ×9
   54  = 9 × 6
  360  = 9 × 40
 7200  = 9 × 800
63000  = 9 × 7000
70614  = 9 × 7846
```

In connection with measurements, bright, wide-awake children like to work with things rather than with mere ideas, and the following problems were done with enthusiasm during the work on linear and square measures. Three days were given in which to work out by themselves the answers.

1. How long a wire is required for the front blackboard?
2. What are the dimensions of the wall-map of N. A.?
3. What is the area of the classroom?
4. How many square yards of burlap are needed to cover the space under the clock?
5. What are the dimensions of the bookcase doors?
6. Find the area of your garden plot. How many feet of fence would it require?

Besides the use of Card No. 7 the following devices are used in oral drill: Easy examples involving the four operations are written on the board one at a time and quickly erased. The children put the answers on paper, exchange, and correct.

Pupils are occasionally asked to give at a glance answers to problems like these:

150 ÷ 75	39 ÷ 3	99 ÷ 33
25 × 8	72 ÷ 12	500 − 250
16 × 4	36 ÷ 2	42 + 18

Copies of the following are given to the children:

	a	b	c	d	e	f	g	h	i
1.	11	36	74	100	5	6	9	12	7
2.	21	32	81	100	8	7	11	8	11
3.	18	53	90	100	7	1	6	11	8
4.	22	41	76	100	3	11	9	8	12
5.	13	47	83	100	9	2	10	8	3
6.	12	38	97	100	4	10	7	12	6
7.	16	57	80	100	2	5	8	9	5
8.	28	33	89	100	6	6	4	11	6

Add e, f, g	From b take a	Multiply g by h	Divide b by g
" e, g, h	" c " b	" h " i	" d " g
" e, h, i	" d " c	" f " g	" d " f

Problems. Particular attention is given to problem work. This is related, as far as possible, to the studies of the grade, thus appealing to the interests of the child. Occasionally facts of the business world are used. A valuable exercise is the invention and solution of problems by the pupils. As a basis for this work it is well to give to the children price lists of clothing, provisions, railroad and steamer rates. The history and geog-

raphy lessons afford excellent material for numerous problems. Cards on which are written problems similar to this, *$1.00 — (6× $.08,)* are given to the children for problem making. During a free period following a lesson on liquid measure, these original problems, a few of many similar ones, were written on paper by the children and solved in the next arithmetic period.

1. Cook used 8 quarts of vinegar to make pickles. How many gallons did she use? At $.04 a pint, what was the cost of the vinegar?

2. Mary watered her garden, carrying the water pot six times. It held 8 quarts. How many quarts did she carry in all? How many pints?

3. Lucy went to the store to buy 3 pints of milk for fudge. It cost $.08 a quart. She gave the man $1.00. How much change did she receive?

4. A gallon of maple syrup cost $1.20; what is the cost of 3 quarts?

As has already been stated, the emphasis of the year is placed upon the four fundamental operations with the result that the pupils acquire the ability to use these operations with a fair degree of accuracy and speed. This means that the larger part of the recitation period is devoted to oral and written drill and that every effort is used to keep the pupils thoroughly interested in their work by the use of a variety of interesting devices. There is no royal road to the mastery of these fundamentals of arithmetic. Success will depend upon the ability of the teacher to keep the child working with zeal and enthusiasm at his full capacity.

F. M. M.

GEOGRAPHY

Grade IV

By the time the child has reached the fourth grade he has acquired some knowledge of the geographic features of the home locality and its life conditions; he has been taught to realize to a certain extent his relations to neighboring regions and to distant localities, and in the use of globe and wall maps he has been given a general idea of the world and the location of the continents, oceans, and heat belts. Thus, with a review and an enlargement of the world conditions of the third grade, the child is definitely prepared to begin the next stage of the geography course, which consists of a study of North America and especially of the United States.

At the very beginning care should be taken to give the child a right conception of a continent as a land mass having highlands, lowlands, slopes, and river basins. It is generally agreed that children should know their own country early, but as a thorough study of a continent cannot be made by young children with the care and detail that it can later on, North America and the United States are again studied in the seventh grade, but from a different point of view. The primary study places the emphasis upon the industrial side and the later study upon the physical side.

In the study of an industry only a small portion of time is given to the technical details, as they are not generally understood by the children and consequently of but little value. but the emphasis is placed upon those phases which develop a knowledge of the geographic conditions that determine an industry.

The outlines for continent study and for the study of the political divisions of the United States are as follows:

I.	Position	In hemisphere In relation to other continents, to oceans. As to heat belts.
II.	Size	Compared with other continents.

III. Surface
- Highlands
  - Appalachian — Compare as to height, extent, grandeur.
  - Cordilleran — Compare as to height, extent, grandeur.
- Lowlands
  - Atlantic plain.
  - Great central plain.
  - Pacific slope.
  - Coast lines, harbors

a. Part densely populated. Reasons.
b. Effect of surface upon drainage.

IV. Drainage
- A. River systems
  - Arctic, source.
  - Atlantic, direction of flow, length and importance of principal rivers, comparisons
  - Gulf — same as Atlantic
  - Pacific — same as Atlantic
- B. Lakes: Great Lakes; importance.

V. Climate.
- Heat belts.
- Winds. General direction noted.
- Rainfall. General distribution.

VI. Vegetation
- Tundras.
- Forests.
- Grass lands.
- Deserts.

VII. Animals
- Arctic region.
- Southern region.
- Central region.

VIII. People
- Eskimo.
- Indian.
- Mexican.
- People of U. S. and Canada.

The continent study is followed by a brief study of the United States as a whole, preliminary to a detailed study of each section like the following.

Southern States.

1. Position in United States.

2. Climate.
3. Surface.
4. Drainage.
5. Industries.

Agriculture.

(Other typical products are treated in a similar manner.)

(a) Cotton
Conditions for growing { Slope. Soil. Climate.

(b) A cotton plantation { Extent. Life on plantation. Growth of plant. Uses of cotton.

(c) Cotton centres { New Orleans. Galveston. Savannah. Charleston.

Locate and give reasons for these locations.

Other industries of this section are studied to an extent sufficient to make the children realize that other occupations are carried on here, though not so extensively as agriculture. Industries are compared with those of other sections. At the close of a section study, the conditions favorable for each industry are carefully reviewed.

Method. In teaching the geography of this grade the oral discussion of topics is the method employed. Use is made of Dodge's *Elementary Geography*, and Tarr and McMurry's *Geography of North America*, but the topics already given in the outline are developed in the class and the text-books are only suggestive. Each topic is developed as a whole, though its relations with others are discussed.

In the study of the surface of North America, instead of having the children get the facts from the text-book exclusively, they make a study of stereopticon views, photographs, and maps, From this study they are led by questions to gather information about the highlands, the lowlands, and other physical features. Often in the study of the political divisions of the United States the children, from observation and reasoning, make their own

geographies, and this plan has given them much enjoyment. After class discussion lessons from text-books are assigned as a summary and review.

As it is necessary for children to use their imagination in almost every geography lesson, the teacher endeavors by sketch and verbal descriptions to stimulate their power to visualize. Sometimes they are asked to close their eyes and picture the scene or form images of the object.

During the development of a subject, a list of topics is placed upon the board and later copied by the pupils for use in oral or written reproduction. A lesson on agriculture, following a study of surface, climate, and drainage of the Southern Mississippi Valley States, was presented as follows: After the children had been told that agriculture is the leading occupation of the South, the question was asked "What are the conditions that make this industry possible?" The requirements—a slope suitable to hold soil, fertile soil, a suitable climate, and nearness to a market or a good shipping centre—were developed during the study of New England, but were again carefully reviewed and compared with the conditions of other sections, especially as to differences in climate. Using the wall and book maps, the children, with this previous knowledge of surface features and conditions, located the agricultural sections. The information concerning the products raised was given by the pupils from what they had read or from personal experience, as many of them had been to the southern states. The conditions for raising cotton, rice, and sugar cane were read by the pupils and the areas were then located. Here the question was asked, "Why is not all the cotton manufactured here instead of shipping a part of it to New England?" A cotton plantation was then studied according to the outline; the leading centres, New Orleans and Galveston, located, and the reasons for their location given. During the study of a cotton plantation these questions were raised: "How does the population of this section compare with New England where farms are small?" "Why are there so many negro laborers in the south?"

At the end of the year the children have gained a good working knowledge of the United States, and have learned to see their country as a whole with closely related parts. They have been taught to read maps and to relate the information gotten from

them. Their powers of observation, reasoning, and imagination have been stimulated, while self-activity and original thought have been aroused.

F. M. M.

HISTORY

Grade IV

The history of the fourth grade is closely related to the geography, which consists of a brief study of the larger physical features of North America, and a more detailed study of the individual countries of the continent, with especial emphasis upon the United States. In connection with this work is introduced a simple biographical treatment of some typical men of action who have had a large share in the development of the nation. A study is made of Smith, Standish, Winthrop, Bradford, Williams, Stuyvesant, Penn, Franklin, Washington, Boone, Lewis and Clark, and Lincoln.

We attempt to give the children some realization of the debt we owe these men, of the dangers and difficulties they met with in their efforts to develop the country, of the tremendous obstacles they overcame, and of the hardships they suffered. The principles that animated them, their heroism, their patriotism, their loyalty, arouse the admiration of the children and inspire them with high ideals. A large part of the work is given by the teacher, but Thomas's *Elementary History of the United States* is used as a text-book, and the pupils are trained to read and recite on lessons assigned. The history story is arranged by topics, and after each topic is presented and discussed, an outline is put upon the board as a basis for the oral and written reproduction. Throughout the discussion there is a constant use of maps, sketches, and pictures so that situations, difficulties, and scenes may be made clear.

In the presentation of a story it is the teacher's aim to cultivate independent thought and self-activity in her pupils by making facts and situations so realistic and comprehensible that when problems in connection with the story are presented they may be intelligently solved.

Following are the chief phases emphasized in the treatment of the story of Lewis and Clark, and several illustrations of problems that arose during the discussion. The children were

told that at the beginning of the nineteenth century very little was known of the Missouri River and almost nothing of the great Northwest. Now that this land had been recently sold to the United States by France, President Jefferson sent out an expedition to explore the country, and Lewis and Clark were chosen as leaders. The question as to the purpose of the trip led to the facts that the government desired to learn more about the Missouri River, to find a good route of travel to the Pacific Ocean, to learn about the Indians, to establish friendly relations with them, and to observe the soil, climate, plant and animal life with a view to future settlement. When these facts were made clear, the kind of men needed to make up the party was discussed and the preparations for the journey developed. The children realized how much greater the difficulties were then than at the present time, and the need of clothing, provisions, firearms, ammunition, medicine, boats, and presents to gain the good will of the Indians was worked out.

The party halted late in autumn on the banks of the Missouri River. This fact led to a discussion of their reasons for so doing, the best place for an encampment, and what the party did during the winter. Early in the spring the men started again on their journey and soon came to the Great Falls of the river, where their progress by boat was impeded. How did they proceed? The fact of their journeying on foot, carrying the boats and making stronger ones when their own proved too slight, brought out the qualities of determination and perseverance of the men. Often they were half starved, ragged, weary, and disheartened, but they kept on. How were they encouraged? Here followed an interesting discussion of the leaders, their management of the party, and their ability to overcome obstacles. Comparisons with other explorers showed points of resemblance and difference.

In November the explorers reached the Pacific coast, and as it was too late in the year to start on the return trip, they put up quarters for the winter. How did they utilize the time? The pupils saw that now was the time to observe the coast Indians—their manner of life, the animals they caught, and the furs they exchanged; also to learn about the country, its soil, climate, plant and animal life, and minerals. They began the homeward journey in the spring and reached St. Louis in

two years and four months after they set out. Of what value was the journey?

At the beginning of the story, maps were consulted, and sketches were drawn on the board to make the routes clear, so that with a good understanding of the situation the problems of the journey could be easily solved. During the discussion the following topical outline was placed upon the board, also in the pupils' blank books, and was used the following day in the oral reproduction:

I. Purpose of expedition.
II. Leaders and men who made up the party.
III. Preparation.
IV. Journey up the Missouri.
V. The Sioux Indians.
VI. Winter encampment.
VII. Journey to the Great Falls and obstacles met with.
  How Lewis and Clark encouraged the men.
VIII. Story of journey to Columbia River.
  Description of the country.
IX. The Pacific.
    Coast Indians.
    How the explorers spent the winter.
X. The return to St. Louis.
XI. Value of the journey.
XII. Comparisons between this and other expeditions.

The lives of the other "Makers of the Nation" are studied in a similar manner, and as they were men associated with various sections of the country and with various stages of its development, there is no reason why this biographical work should not give fairly chronological ideas as to the significant factors in our national growth.

Beside the historical interest that results from this study, we hope to develop in the children greater independence of thought, deeper appreciation of moral courage, of self-sacrifice and of loyalty, and a higher conception of the meaning of patriotism.

F. M. M.

NATURE-STUDY

Grade IV

"And nature, the old nurse, took
The child upon her knee"—*Longfellow.*

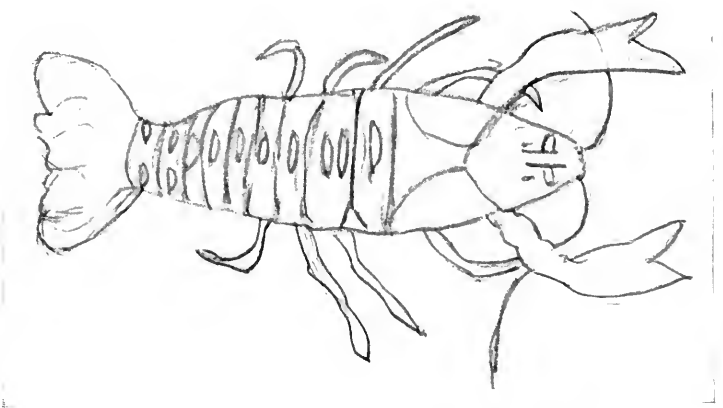
If we are to give nature lessons to little children, we must follow Mother Nature's hints and ways, or we may do more harm than good. If we can lead the city child to step softly lest he crush some tiny, working thing; to rejoice in planting trees and wild flowers, rather than in breaking branches and ruthlessly pulling up plants; to sympathize with the work of country people, and to revel in the joys of out-of-door life, we may well consider nature lessons as part of our school work. With this spirit predominating in the work, we may hope for a fair degree of success in our two other chief aims, namely, training the children in habits of scientific observation, and helping them to a knowledge of useful facts.

Our working plan is based on observational study of natural things suggested by our industrial work in geography, such as agriculture, fisheries, mining, quarrying, and lumbering of the United States. Also we take some related topics which are suggested by our reading of *Water Babies*, such as the dragonfly, nymphs, caddices, and lobsters or crayfish.

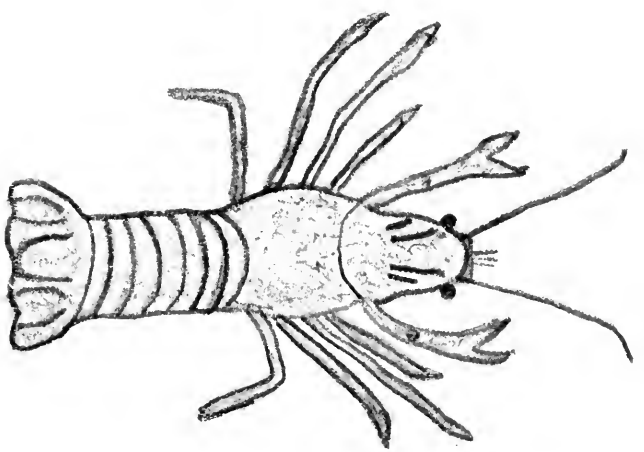
When the children return to school in September, they find waiting for them in the school garden the corn, wheat, oats, rye, barley, potatoes, and sometimes tobacco and cotton which they planted or sowed the previous spring. These help to make the geography and colonial history work very real, and we harvest and carefully study them in their fruit stages.

In October we sow winter rye, one bed in rows as if it were drilled in, another broadcast. This they watch to see which grows and matures more perfectly, and they are led to discover for themselves the reasons for what they see.

We cannot keep live lobsters in the room but we have crayfish living with us as long as we like, and the children care for and watch them every morning. For a period at a time, each



Crayfish drawn in connection with nature-work



Crayfish drawn in connection with nature-work

child has a crayfish in a dish on his desk where he may watch it for its peculiar movements and structure, and draw it.

Such questions as these are asked:

How many have seen the crayfish in its native home?
In what kind of places does it like to live?
How does the crayfish move about?
How does it get its food? What is its food?
How does it defend itself?
What is unusual about its eyes?
Of what use to us is the crayfish?

As we work, such an outline as the following is made by the children on the blackboard:

THE CRAYFISH

I. Its home.
II. Its movements. Reasons for them
III. Its external structure. Uses of each part.
IV. Its uses to man.

This study of the crayfish is followed by the subject of lobster fishing in New England. The habits and needs of the salt-water relative are compared with those of the crayfish. Then the special methods of lobster fishing are studied. Together we set up an aquarium containing hardy plants, fish, tadpoles, and snails. One year we were able to gather these from the country brooks, and the snails laid eggs, and the plants grew so rapidly that in the spring there was enough material to stock several small aquaria for the children to take home. In April and May dragonfly nymphs and caddices live with us in much the same manner and are studied as the crayfish. After this no child will fail to visit the New York Aquarium, for the Horace Mann School-child is always glad to know of "something nice to do on Saturday" or holidays.

The common lumber trees which grow in Columbia Campus and Riverside Park are studied from a lumbering standpoint, and the Natural History Museum furnishes fine specimens of wood. This connects the tree work of previous years and the forestry studies of the fifth grade.

With the study of mining and quarrying we have specimens of coal, iron, gold, silver, and copper ore; and such building

materials as the stones, sand, clay, and cement which the children see used in the city. We study the characteristics of these enough to decide how they are obtained and transported, and where, how, and why they are used. In some cases we may actually see the quarrying going on in and about the city, and frequently some of the children have visited distant mines and quarries and are able to give us needed information.

As early as possible in the spring the children begin their out-door work in the school garden, where they help prepare the beds and sow the seeds. As the year before they have put in grains and vegetables, they now have flower seeds from which to choose their favorites, such as sunflowers, cosmos, marigolds, and nasturtiums, which will be in bloom when they return in the fall, when they will need them for art work and room decoration. These garden beds are watched and cared for by the children as much as possible, until school closes in the spring.

This nature work described above is done at regular periods as far as possible, but we also hold ourselves free to do related work when the material offers, even if the subject be not on our program at the time.

Early in May a child appeared with a great bunch of arbutus blossoms. He told us where he had found and gathered them, and how he had tried but could not make the plants grow in his city garden. Another child volunteered the Indian legend about the arbutus, and in the free period that day a little girl "made up" the following:

THE ARBUTUS

One day the arbutus,
  In pale pink and green,
Rose from the brown earth
  To greet the May Queen.

How fresh the air is!
  How bare the trees!
Little frail Mayflower
  Thinks she will freeze.

Now comes the sunshine,
  Now comes sweet May.

Smiling on everything,
  Warmer each day.
Now sweet Mayblossom
  Happy may play.

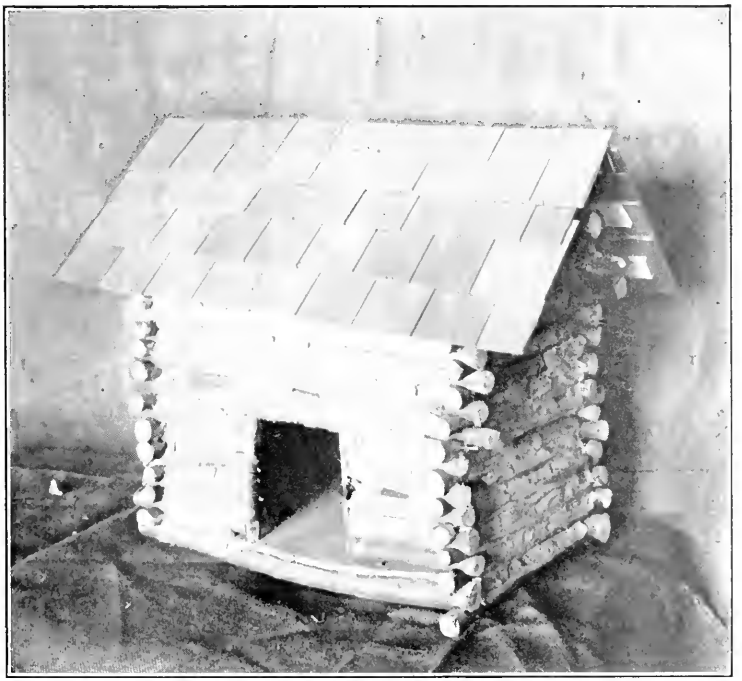
I. E. R.

MANUAL TRAINING

Grade IV

The handwork of the fourth grade deals particularly with the household occupations as they developed during the early part of the colonial period of American life.

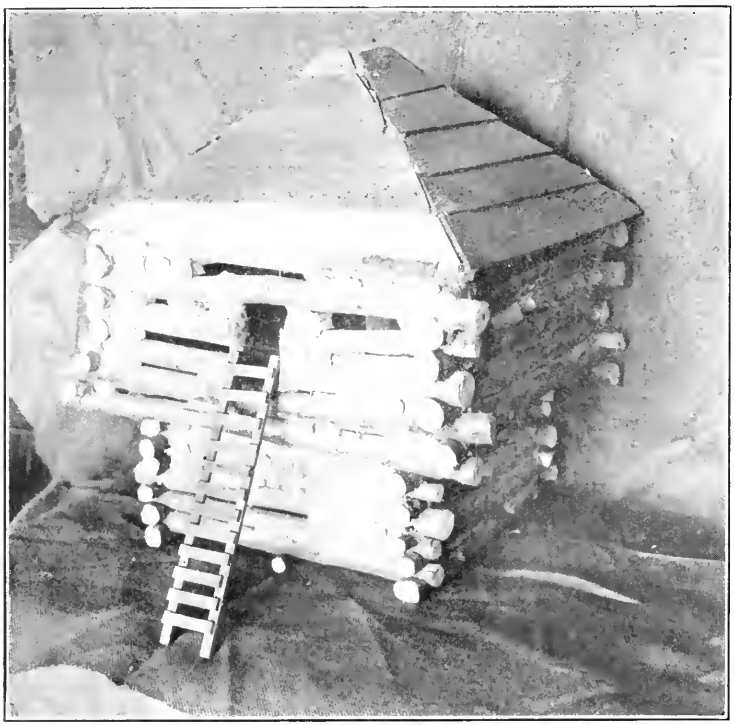
The children come to look upon pioneer settlers as people of an advanced stage of civilization face to face with the problem



Log Cabin

of securing food, clothing, and shelter, and of establishing means of transportation and communication under primitive conditions. Because of these circumstances, their experiences were much the same as those of primitive peoples, but owing to their superior knowledge and to the fact that they had resources other than

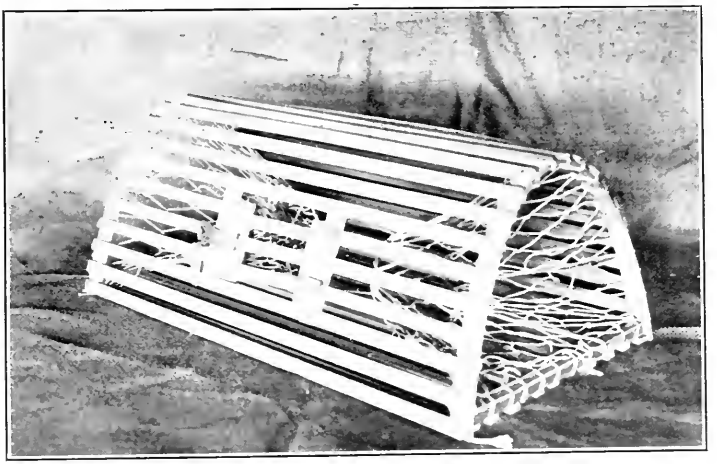
their environment offered, they developed in all directions much more rapidly. For example, they were not long satisfied with the cave and wigwam or bark house of the Indian as a form of shelter. Seeing the vast forests on every side, and having axes at hand, they felled trees and built log cabins which afforded them permanent dwellings, and insured to them greater protection than did those of the Indian.



Blockhouse

Most of the children have seen log cabins or pictures of them so that they are more or less familiar with their appearance and construction. In this connection they build a small log cabin. They gather what materials they can for this in the vicinity, and if more is needed, excursions are made either to the campus or elsewhere to secure it. The different parts of the cabin, the

method of constructing it, and the dimensions are all developed in a class discussion. Then the various parts are assigned to the individual children, to one or two the making of the flooring, to several others the shingles for the roof, to another the door, to the remaining ones the sawing of the logs to length, and notching them with the chisel. Two children are chosen at each lesson to act as builders. When the building is finished several children fill in the "cracks" with clay, thus completing it. Sometimes several cabins are built by the class at the same time,



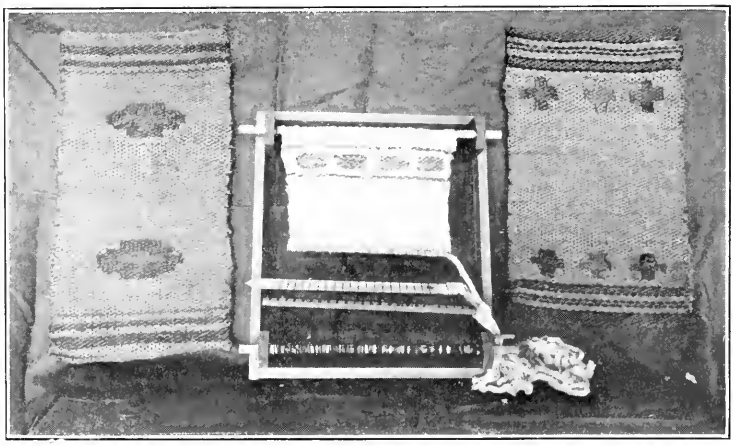
Lobster Pot

and frequently one is left open on one side so that it can be furnished later.

Then the need of further means of protection from the attacks of the Indians is developed and a blockhouse or fort is built. This is worked out in much the same way as the log cabin, and is built either by a group of children or by the entire class.

In connection with problems of securing food by means of fishing, hunting, and trapping, fish weirs, nets, and lobster pots are made, and several simple traps as the "box" and "dead fall" are set up in the sand table. Most of the other occupations dealt with are domestic and center about the home. Spinning, weaving, knitting, netting, quilting, embroidering, cooking, and soap and candle making are among those which suggest

themselves, but there is not sufficient time to develop all in school. Weaving is usually selected as being typical, and as best carrying forward the industrial thought. In connection with the weaving, the children study about and experiment with processes of preparing and spinning such material as flax, or cotton, making constant comparisons with parallel processes in spinning with which they are already familiar. Their previous knowledge and experience of looms and weaving gained in the first and second grades, where they made a simple frame loom with string heddles, and wove rugs and mats for various uses, makes it possible to develop the principle of the continuous



Continuous warp loom
Rugs made by individual children

warp loom in this grade. This is approached by recalling or reviewing the work of the first and second grades, and the nature of the articles woven there. The limitations of such looms, and their inadequacy for supplying the wants of man as he became more civilized, are quickly seen. The question of the possibility of weaving a piece of cloth longer than the loom is considered, and ways of accomplishing it are suggested. The difficulties in handling the long length of thread, the time consumed, and the patience necessary, are all discussed, and are appreciated by the children. These facts invariably lead to the suggestion by the children that for such work looms must

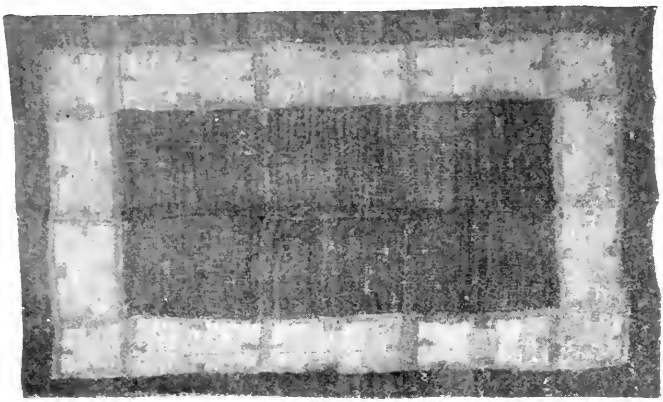
have been invented having an arrangement of rollers on which the warp could be wound when not in use and unwound as needed. The name "continuous warp" is then given them. To the question as to whether they can think of any way of adding rollers to the frame loom which would be simple enough for them to make, they have ready responses, from which we gradually evolve the loom shown in the illustration.

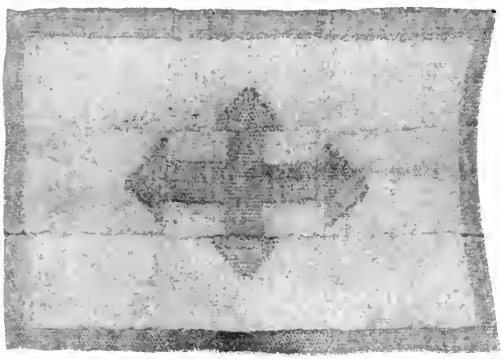
Problems of fastening the warp threads to the warp beam and holding the beams so as to keep them from turning are solved in a similar manner. No attempt is made to develop this form of heddle with the children, it being too much of a problem. Instead the heddle and its function in weaving is shown to them, but the way it performs that function is left to them to discover. In the weaving, different materials are used such as candle wicking, wool, jute, and rags. Sofa pillows, covers, rugs, table-scarfs and couch-covers are among the articles made. The children make band and spot designs for these in connection with their art work (See Article on Art, p. 38).

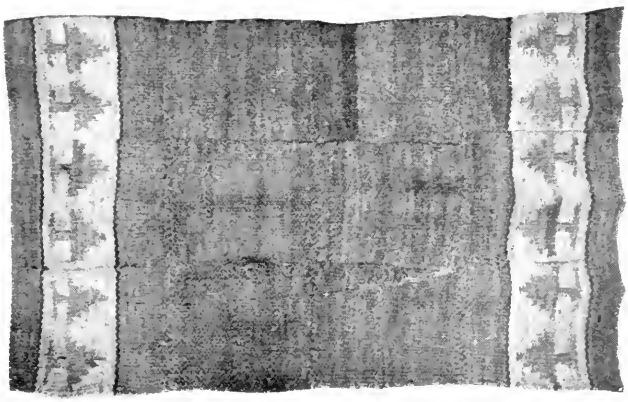
The large rugs shown in the illustration on the following page are class rugs woven last year. These were each made in small sections and sewed together to form a large rug. The rug with the border of trees is $3\frac{1}{2}$ feet long and 2 feet wide, and is composed of 12 sections—6 center ones and 6 border ones. It represents the work of a group of twelve children. The small rugs shown with the loom were designed and woven by individual children in this grade.

The development from the hand loom to the foot loom is simple, and the children take the step readily. They have constant access to a small foot loom of the colonial type and each child has an opportunity to do some weaving on it. This concludes the children's actual experience with loom weaving in school, as it brings the subject to the time of the introduction of power. When possible a visit is made to a textile factory and the children have an opportunity to see modern power looms in operation, and to gain some appreciation of the weaving industry as it is carried on at the present time.

L. H. W.







ART

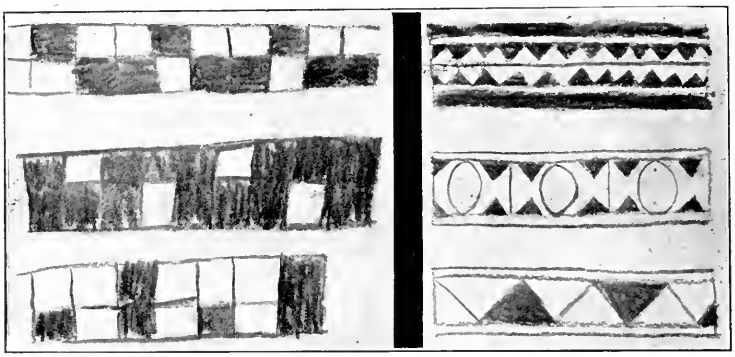
Grades IV and V

The dependence of all the visual arts for their excellence upon certain simple harmonies, and the fact that these harmonies of space, mass, and color may be classified into simple exercises which call the creative power into use, make their study one specially adapted to the development of the child. Guided self-expression is as much the aim of the art course as it is of any other

course in the curriculum, for it is only as the child expresses his judgment, whether it be in the form of his own creation or in the choice of the work of another, that we are able to distinguish any progress. In planning the art work for all the grades we endeavor to keep close to the fundamental principle that all rational instruction must be based upon the particular stage of

the child's development. Hence we consider, so far as we are able to judge, the child's capacity for an increased appreciation of spacing, massing, and coloring, and the fact that at this age he becomes more critical of results than at any previous time in his life, and that his power to execute does not equal his power to appreciate. Therefore the teacher in selecting a subject considers whether a satisfactory handling of that subject lies within the power of the child.

The work in the fourth grade, as planned this year, opens with nature drawing and painting. In this work two considerations are uppermost. First, the subjects selected are good in line, mass, and color; and, second, they furnish the opportunity necessary at the beginning of a year's work in art for handling



Design for book-cover border

Variations of Greek motifs for bowls

the different tools of expression. For these two reasons we begin the work by directing attention to characteristic lines of stem, flower, and leaf; to the dark and light massing of flowers and leaves; and to the strong colors of autumn flowers and vegetables.

The child, having had three years' experience in selecting the size and shape of paper best suited to the proper placing of the subject, now notes the relation of spaces in the subject itself. For example, the problem of drawing the marigold is before the class. The first question to decide is, "Which is the most prominent part of the subject, the blossom; the stem, or the leaves?" The appreciation of the principle of principal and subordinate spaces, which the teacher has as her aim in presenting

such a subject, will determine how many leaves it is necessary to draw in order to balance the blossom. It must be remembered that the teacher selects, and leads the child to select, as subjects only those things which embody some art principle. See illustration, p. 35.

Book-cover with border

Since good spacing is the foundation upon which we build our massing and coloring, the first lessons are chalk, charcoal, or pencil drawings of the subjects. It is here that emphasis is placed upon the characteristic lines of the subject. This is

followed by massing either on the board, or with pencil, charcoal, or ink to show the relative values of the tones of the stems, blossoms, and leaves. Finally color schemes are made from the subject. If the colors are difficult ones to mix correctly, this lesson in matching the colors is given as a separate exercise, preceding the painting of the flower. The child at this age is able to handle combinations of three tones.

The manual training work furnishes splendid subjects for the working out of art principles. Throughout the year we find abundant opportunities for the application of our exercises in rhythm, subordination, proportion, symmetry, dark and light arrangement, and color. Designs for general outlines, borders, and all-over designs, whether for bowls, baskets, blankets, rugs, or book-covers, are excellent subjects for our purposes, for they all depend for their excellence upon the art principles before suggested. The child is led to see that until he has secured a satisfactory arrangement of spaces it is useless to plan the dark and light arrangement or the colors.

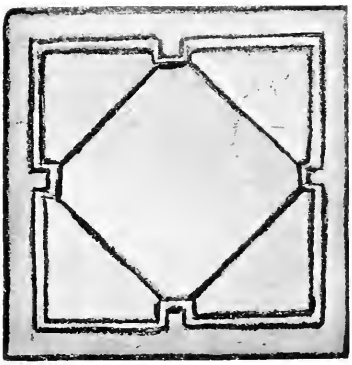
The problem of lettering is first thought of as a problem in space arrangement. The size of the space to be filled with letters having been determined, the next step is to decide upon the general proportions of the letters best suited to the space. The child experiments with charcoal to find whether square or tall letters best fill the space. When a decision has been made, the letters are drawn with the brush, using ink or paint. The design for a book-cover having been previously worked out as to massing, (see illustration, p. 36), the child next considers the color of the letters in relation to the tone of the paper and the tone of the border, if a border is used. The fact that the letters must be simple in line, good in proportion, and in massing and coloring must be such that they appear to belong to the space on which they are placed, makes the problem of lettering a valuable one from the artistic standpoint.

The use of illustration in the art course depends for its value upon a knowledge of spacing, massing, and coloring, and as such must be distinguished from mere story-telling. At various times during the year landscape composition, animal pose, and object drawing are used as subjects, and so used that they embody the principles of art. During the latter part of the year the child unconsciously applies his art principles to his illustrations.

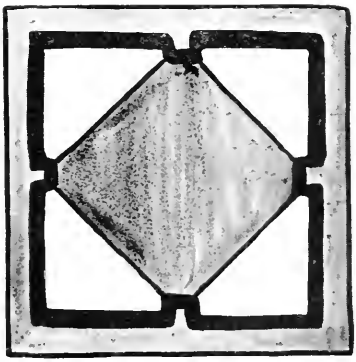
Bearing in mind that art instruction in the schools has for its purpose an appreciation of harmony and not primarily the production of a work of art, we study not only good pictures, but also fine examples of architecture, sculpture, textiles, furniture, and pottery. These examples are brought to the attention of the child in connection with his simple exercises in order that art may become unconsciously a vital part of his life. The recognition of harmony in color, for instance, is not a thing that may be reasoned out or learned from books. It is an unconscious development brought about by a constant association with the best works in color.

Building upon the work in spacing, massing, and coloring of the four preceding years, the children in the fifth grade proceed from the breaking up into harmonious sizes and shapes of the space enclosed within the square to that enclosed within the rectangle; from massing in three tones to five tones; in dealing with color from dark and light to dark, medium, and light, and in hue from combinations of two colors to combinations of three.

One of the most successful problems of the year is the design for a tile which is to be made from clay, glazed, and fired under the direction of the manual-training teacher. The tile is a



Charcoal sketch



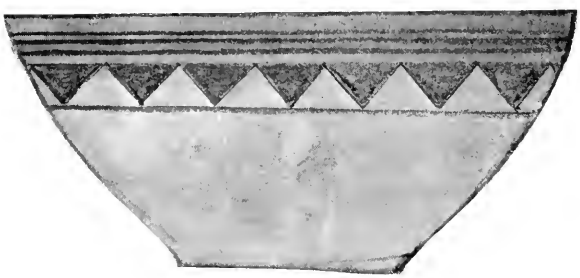
Massing sketch

Design for tile

square, and since a square is the simplest space for children to handle, the problem in spacing the design is a suitable one with which to begin the design work. By examples and questions the

children are guided to observe the principle of principal and subordinate masses. A number of charcoal sketches are made. A choice of these furnishes opportunity for discussing why certain designs are fine and others commonplace. Massing the chosen design in as many arrangements of three and five tones as the child chooses, not only delights him because of his instinctive desire to find out what changes take place in the appearance of the design by a change in the amount of gray, black, or white used, but, what is more important, he sees and appreciates the fact that good spacing will not ensure good massing. A good design in spacing may be obscured by poor massing. When good massing is joined to fine spacing, the child is ready to consider color. The tones of color as well as the hue are considered.

From this problem dealing with the square, we advance to the same problem with the rectangle. This problem takes the form of a book-cover, or a portfolio, and is worked out just as the tile problem was. One additional element, that of lettering, enters here and is based upon the work done in the fourth year.



Bowl with Greek border

History awakens an interest in Greek and Roman art; therefore, it is here that we make a beginning of art history as well as strive to develop an appreciation of the art of these people. Any number of subjects are suggested by this fertile field. The study of pictures, architecture, sculpture, and vase forms is introduced in connection with the simple exercises of the class; for example, the beauty of the Parthenon can be more nearly appreciated after the class has been studying rhythm, the Moses of Michel Angelo after attempts at pose drawing, and so on. Nature drawing, object drawing, and pose drawing are used

throughout the year as they offer opportunities for working out harmonies of space, mass, and color. In a still-life group, the teacher chooses the objects with regard to large and small masses, dark and light masses, harmonious colors, and elements of perspective involved. She first directs the attention to the placing of the group upon the paper. This outline drawing of the group is a lesson in line and is repeated until the children intelligently secure a good line quality. If necessary to hold the interest of the class, the objects are changed. The experience gained by criticising the drawings of the class at the close of each recitation is very valuable. The next step is a lesson on painting the spaces in black and as many tones of gray as are needed to enable the children to recognize and express relative values of color. Finally the attention is centred upon the difference in hue.

When the children leave the fifth-year art work they should understand the principles of repetition, subordination, symmetry, and proportion as related to spacing. In massing they should be able to handle combinations of three, four, and five tones, and in color to understand the difference between hue and dark and light.

E. M.

MUSIC

Grades IV and V

When we begin to teach the children to sing in their first school year our main object is to get them to enjoy it. We give them songs which they can understand and in which, as far as possible, the melodies express the sentiment of the words. The children soon learn to see the close connection between the words and the melody, and between the words and the rhythm. This helps them to sing with meaning and expression. From the very start we try to keep the children's singing simple and natural so that they talk their songs, but use their singing voices. They are often encouraged to sing their own thoughts instead of talking them, such as singing their "Good-morning" and "Good-bye," and some of their questions and answers. This practice of thought-singing develops in the second and third years into song-making. Instead of singing a question, answer, or short statement, the children make up couplets and try to sing them so that the rhythm and the melody will suit the meaning of the words. After a time, by frequently noticing the way the tunes of their sentence-songs and rote-songs go up and down and by sketching the tunes with dashes, they easily build the staff on which to put their own tunes so that they may be kept.

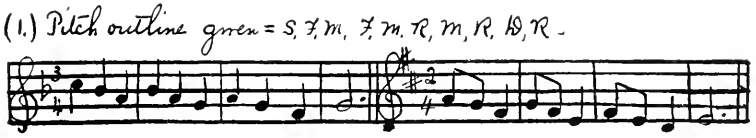
Parallel with this melody-picturing and staff-building goes the development of the rhythmical sense. The children in the first and second grades have a great deal of practice in clapping to their rote-songs and in swinging their hands to mark the pulses. After much practice in clapping and swinging to songs and Mother Goose rhymes they are able to make the circles and dashes upon the board. The next step is that of learning the values of notes to represent the circles and dashes. In order to write their sentence songs upon the staff, the children must understand the fixed pitch relationship of the lines and spaces of the staff, and the intervals of whole and half steps which they represent. This interesting investigation is carried on in the third year. With a knowledge of the pitch relationship of the staff and of note values, the children of the third grade are ready

to write their own songs in regular musical form, and to sing simple exercises and songs from the board and from their music-readers. This briefly sketches the work of the first three school years. The January and September numbers of the *Teachers College Record* for 1906 contain a more detailed account.

For three years the children have been working from the sound of a phrase to its representation in notation. With the fourth year the order is reversed, and they begin to work from the notation to the sound. Their three years' work has furnished them with a knowledge of musical notation sufficient to enable them to sing simple phrases after having studied the melody and its rhythm separately. Now we wish them to be able to combine at sight the melody and rhythm of a song, phrase by phrase.

As an aid towards combining rhythmic and pitch relationships we give such practice as the following:

(1) Supplying the rhythm to a given pitch outline.
(2) " " pitch " " rhythmic "
(3) Changing the pitch outline of a motive.
(4) " " rhythmic " " "

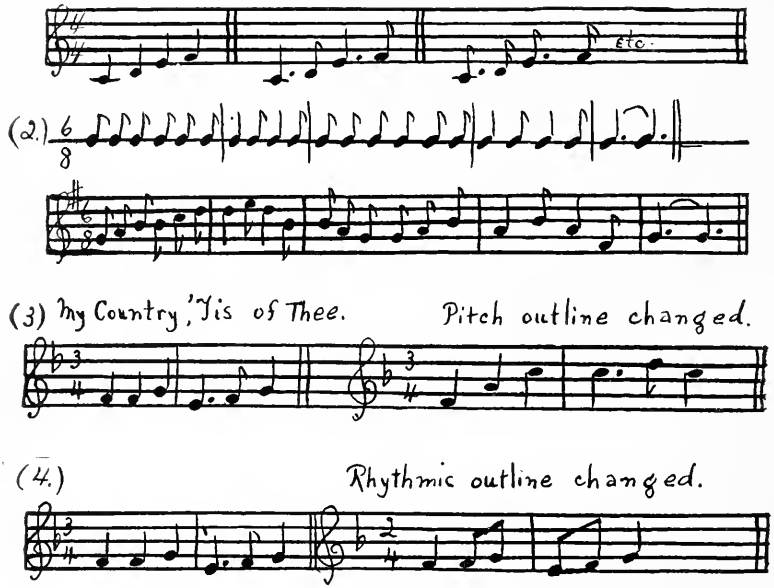


The scale ascending and descending may be taken as a pitch outline and may be varied so as to show the contrast between the whole pulse, the dotted whole pulse, and the dotted half pulse.

There are many devices for helping to gain speed in this phrase-reading. One is to have a staff upon the blackboard with a key and a time signature but no notes. The children watch very closely while a short phrase is being pointed in good rhythm upon the lines and spaces, and then sing the phrase from memory. The exercise is varied by writing a short phrase in notation upon the blackboard. The class is allowed a few seconds to look it through and then it is erased and sung from memory. Phrases are also written upon the board or upon a chart and screened from view. These are uncovered one at a time, covered again, and sung from memory. Different keys

are used in the sight-reading work, adding to those used in the previous grades the keys of D, D*b*, E, E*b*, A, A*b*. Simple phrases such as those in the illustrations are given the children to re-write in one or two different keys. They will find after singing an exercise in different keys that although the tune is the same, when sung in a higher or lower key, it has an entirely different effect.

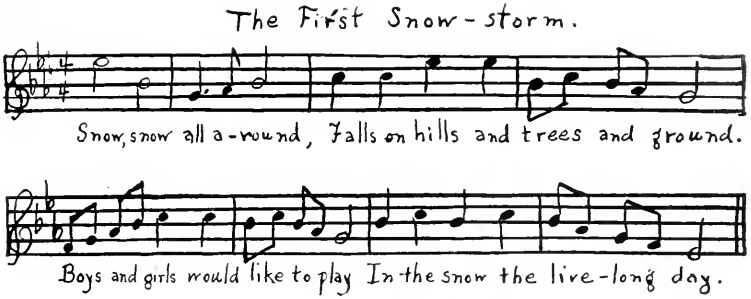
It is excellent practice for the children to write the notation for some of the easy phrases in their rote-songs. We tell them what key to use, and, if necessary, help them to decide what note



the phrase begins on. If it is too difficult for them to write the tune and its rhythm at the same time, they first write just the heads of the notes on the staff to picture the pitch outline and then put in their values. They are also able with a little help to write the notation for their original songs.

The process of song-making is much the same as in the third grade, only the rhymes may be longer if desired, and an attempt is made to make the melody and the rhythm more closely express the thought or action of the words. The songs are made individually and by the class as a whole. When made by the

class, of course each member has a chance to contribute lines to the verse or a phrase to the tune.



The song illustrated above was made by one division of the grade early in the year. The verse was made by one member of the class; the class as a whole decided what rhythm to use by swinging circles to the verse, and the tune was made phrase by phrase by different ones. The tune was started high because of the thought of the snow coming from the sky. After the song was completed, the children noticed that they had sung "hills" high; "trees" a little lower; and "ground" lower still. They tried to express the thought of girls and boys playing in the snow by using the quicker notes running up and down.

We still teach rote-songs, in the singing of which we require greater concentration upon the thought expressed. While the song is being learned, the meaning of the different phrases is discussed, and the children help to decide how the song should be sung so as to bring out the peculiar meaning of each phrase. By talking about the song in this way the children gain very similar ideas of its meaning, so that when they sing it together the expression is much more unified. Each one in the chorus must try to picture the song mentally while singing it, and then try to sing it so as to make pictures come into the minds of those who listen. Take as an example the song with the words by Frank Dempster Sherman:

> "At evening when I go to bed,
> I see the stars shine overhead,
> They are the little daisies white
> That dot the meadow of the night."

The picture that these words suggested to the children, and

which they tried to suggest by their singing to their listeners, was dark and quiet with bright stars overhead. They imagined these stars were white daisies which a very graceful lady was picking. Then the picture changed and there were no more daisies in the field overhead, but down on the ground there was a field covered with them, which the fair lady had dropped from the sky. The class sang the whole song softly and smoothly, but made a slight change at the beginning of the third verse where it tells about arising in the morning. They tried to emphasize the important words that would help make the picture, such as evening, bed, and stars. The class was much amused when it was mentioned that the audience must be made to "see stars."

Each one in the chorus must be responsible for his share not only in concentrating upon the thought of the song, but in watching the chorus leader. Although in previous grades the children have been taught to work together, they are now even more impressed with the importance of every one's watching. The leader has a number of signals which the chorus understands, and by means of these he is able to keep the chorus together and to make each member do exactly what he wants at exactly the same instant, if they are all watching him. Careful watching and careful leading bring a unity into the chorus singing which gives satisfaction not only to the listeners, but to the chorus and its leader.

A clear, free tone is an essential of good chorus singing. One voice a little below pitch, or of a rough, strident quality, will spoil the good tone of a chorus. So special ear and voice training is given those whose voices are either unpleasant or not true to pitch. The tone-quality of a chorus as a whole can be improved by regularly imitating the leader in singing sustained tones on various pitches with different vowel sounds. Good standing or sitting positions are insisted upon during such practice and in all chorus drill. When standing to sing the children stand firmly on both feet with the body and head well erect, even though they are obliged to sing from books. When sitting they sit as far back as possible in the chairs with the trunk of the body erect, not leaning against the chair back, but inclined slightly forward from the hips. This position makes deeper breathing possible, and helps in strengthening the breath control.

One of the three twenty-minute lessons in each week is given to chorus singing with the two divisions of the grade combined. In order to leave the chorus lesson free for regular drill, about a third of the time must be taken from each of the two remaining periods for the actual learning of the rote-songs. Even this time can be made partly a practice time in sight-reading by giving the easiest phrases in the rote songs as exercises for the class to read by themselves. And yet the time that is left for the practice of technical difficulties to aid in sight-reading is very short. This means that regular and intense work must be done, and that as much as possible must be accomplished during the fourth year, because from now on the time allotted to music-study grows less and less.

The more practice in reading the children can have in their fourth year the better fitted they will be for their fifth year's work. They must be ready to begin singing two-part music. As a preparation for this, towards the end of the fourth year we teach canons or rounds. We teach a canon first as a one-part song to the whole chorus, and then divide the chorus into two divisions and later into three. This practice enables the children to carry a melody independently against another part.

In the chorus singing of the fifth year we pay special attention to tone-production and resonance. Up to this time the children have succeeded in singing a clear, smooth tone largely through imitating their leader and aided by their good sitting and standing positions, and by deep breathing. They have unconsciously formed some good vocal habits. Now they must be made conscious of how tone is produced and why certain things must be done in order to produce it well. As they grow older the majority of them will become somewhat self-conscious and will lack freedom in their movements. This is likely to have a bad effect upon their singing. This difficulty may be avoided by helping the children to understand a few principles of good tone-production and to work for freedom in all parts of the musical apparatus. As the musical apparatus includes practically the whole body, we first proceed to limber that up before singing and to keep it in good poise. This is done by giving the following exercises:

(1) The children stand in the aisles that each may have plenty of room. All stand easily erect, then bend the body

freely from the hips, relaxing the arms and hands. (2) Then they gradually raise the body to an erect position, still letting the arms hang limply. (3) The shoulders are made freer by working them forward, backward, upward, and downward, and by lifting and dropping them. (4) The rotary movement is applied to the head by letting it drop forward upon the chest and then rolling it around to the back and front again. When the head goes back the mouth must be allowed to open so as not to strain the chords of the throat and to keep the jaw muscles free.

The liberating exercises are followed by breathing exercises.

1. Inhale deeply. Retain breath for five or six seconds Exhale quickly through the mouth.

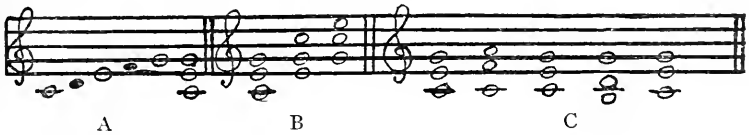
2. Inhale quickly. Retain. Exhale very slowly by blowing the breath out.

The children are encouraged to find out how a few of the most common musical instruments are made, the shape of their resonance boxes and how the air is set to vibrating within them to make a tone. It interests them to find that their own bodies are wonderful musical instruments and that they must try to make their tones sing or vibrate inside themselves as the tone does inside the cello, for instance.

We give vocal exercises which help to make the quality of the voices more even, such as singing the vowels *ä*, *a*, *e*, *o* on a sustained tone, singing a single vowel sound, or the singing names to a simple pitch outline. In this practice attention is called to the fact that the vowel is the musical part of a word and should be sung very smoothly; that it is necessary also to make the consonants crisp and distinct in order to make the words clearly understood.

The technical practice continues the fourth year's study for speed and accuracy in reading by phrases. As an aid in their reading and in their part-singing, we acquaint the chorus with three important chords, the chords of *doh*, *fah*, and *soh*. By the following process the children build these chords: The chorus is divided into three choirs. They all sing *doh*, and the first choir sustains it while the second and third sing slowly up the scale until they find a tone which sounds well with *doh*. *Doh* and *re* sung together sound very unpleasant, but *doh* and *me* harmonize well. The first choir then sustain *doh* and the second

me, while the third sing up the scale until they find a tone harmonizing with *doh* and *me*, which is *soh*.



The whole notes represent the tones which are found to sound well together, the filled-in notes those passed over. (See exercise A.) A comparison is made between the sound of the chord in this position and in other positions. When *doh* is the foundation tone the chord sounds firm and steady. *Doh* sung in the second position, with *me* at the base, adds sweetness to the effect of the chord. With *me* at the top, and *soh* at the base, the chord sounds much brighter. (See exercise B.) The *fah* and *soh* chords are built in the same way, working from the *doh* chord. After the chorus become sufficiently well acquainted with these chords to sing them in their different positions, they sing them in progression from dictation as a tuning-up exercise. (See exercise C.) The *doh* chord is called for with *doh* at the base. Then the three choirs are asked to sing the nearest tone in the *fah* chord and follow that with the *doh* chord and so on.

When the idea of major chords is established the transition to the minor mode is made. After singing the tonic chord *doh, me, soh, doh*, the pitch of *lah*, a minor third below, is given and the chord *lah, doh, me, lah* is sung. The class compares the characteristic difference between one group and the other, and, starting with the upper *lah*, sing down the tones of the natural minor scale. The tones used are exactly the same as in the major scale. The difference in feeling is caused by the emphasis placed upon different starting and closing tones which changes the order of the intervals. Thus the natural minor scale is but a different aspect of the same group of tones out of which the major is made and is represented by the same key signature.

The third step is to show that this minor feeling may be still further developed by changing the upward progression of the natural minor between the sound names of *me* and *lah* by sharping *fah* and *soh*. This gives the tone distances from *me* to *lah*, the same as the class is accustomed to singing from *doh* to

fah. They are first sung this way and then their true scale names are given as *me*, *fe*, *se*, *lah*, the downward scale being sung as the natural minor. This gives the melodic form of the minor.

The fourth step is to show that instead of changing *fah* to *fe*, it can be sung as in the natural minor and the skip made to *se* directly, singing in this case the same both ascending and descending. This skip is easily attained by singing *me*, *fah*, *me*, and *lah*, *se*, *lah*, until *fah* and *se* are thoroughly in mind; then the group *me*, *fah*, *se*, *lah* is easily sung. Thus the harmonic form of the minor is taught.

The purpose of this work in minor is to make clear to the children that many of the so-called accidentals that appear in the pieces they sing are but transitions to the minor and can be easily sung, if the nature of the transition is thoroughly understood.

While the above description covers the technical work of these grades, that work in itself is not the aim of the instruction in music, but it is a means for getting musical results in a more intelligent way from the pupils. The pupils feel the necessity for practicing the technical points, because of the close connection kept between the technique and the end it serves in expressive singing.

H. L.

PHYSICAL EDUCATION

Grades IV and V

In this short sketch we will attempt to give only two illustrations of the work in the gymnasium with the fourth and fifth grades, but with these illustrations we will suggest the change in viewpoint of the work as a whole.

A relay-race is one of the fourth grade games. Four equal divisions of the class are made, and the lines form at one end of the room. In front of each line and about fifteen feet distant a goal is set up. The goal—either a stool or an Indian club—is placed on the floor so that in the race the runner may go around it. At a signal the first four in the lines run (or walk) across the floor, around the goal, and back to the starting line. The next four run in the same manner. After all the children have tried the race, the winners of each four may race together.

While any four children are running the others watch to see what points they can get which will help them in the race. Those who are to run try to profit by the experience of the racers who have preceded them. While winning the race is the objective point to the child, the real value of the game to him is in his finding why he succeeds or fails. The competition is only the measure by which he finds the problem. It is the means through which he perceives that different results are obtained by different actions. The ability to adjust himself, by making the coördinations which he sees are necessary to meet the required conditions, is the vital point of the game.

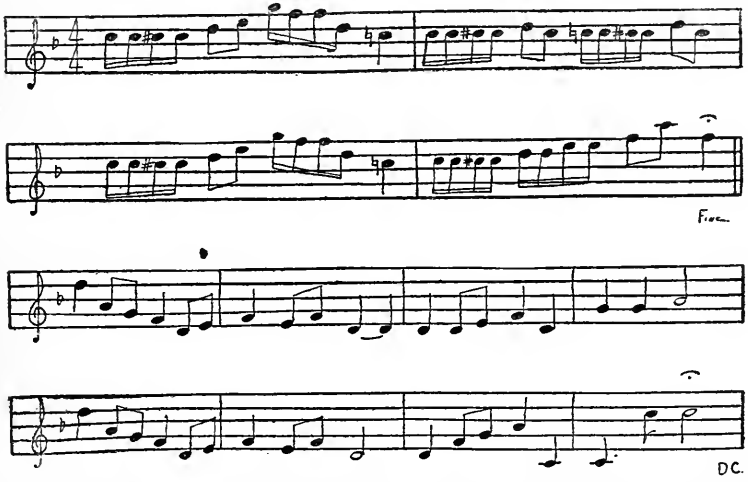
When the children become conscious of the problem, and show a certain degree of skill in meeting it, we begin to study how we can join the forces and, by coöperating, work, not individual against individual, but side against side. There are many new questions now, for we attempt to find how two or more people can, by working together, attain a given end more easily than when they work alone. The children very quickly see that if one runner forgets his place in the line and gets in the path of the next one, in order to gain an advantage for himself, he may cause his side to lose the race. While coöper-

ation makes the effort less for the individual, it makes the problem of coördination much harder. The child finds that he must act in relation to the others on his side, as well as in relation to the goal. The children work out for themselves the rules of the game. These represent the conditions which make the problem the same for all, and give a basis for judging the results. In this way it is possible for one to learn from the efforts of others.

In order that the child may carry over the knowledge and interest from the problem on which he has worked, one game is developed from another. The new problem always requires more ability than the previous one called forth. In working in this manner, the children soon realize that one individual gains an advantage over the others because he is able to make the motor adjustments more easily and more quickly. They see, for instance, that the starting position is important; that some children, when running, use their arms to better advantage than others; and that the power to keep up speed, when going around the goal, requires great accuracy of eye and control of the acting muscles.

It is such points as these that give the basis for the technical side of the work. The gymnastic program is developed from the games and the other motor work of the school. We arrange our gymnastics, to a considerable extent, in accord with the conventional program: but when the psychological factors require it, we vary from the accustomed order and method of presentation. What we desire is not merely the anatomical progression in movement, but the development of motor efficiency in order that the child may carry out the ideas on which he is at work. What the child must do is to connect his motor technique with the ideas he is endeavoring to express in action if he is to have genuine interest in his technical training. In so relating the factors we get a degree of interest in the gymnastics that is vital and deep-seated. The gymnastics become worth while as the means to the end for which the child is striving. We have suggested the motor work in the school with which we connect the technique. The manual training offers great opportunity. We consider the making of a loom, for instance, a more highly developed problem of skill than the relay race, and there is with it a finer degree of coördination required in the technique.

The attainment of skill in the games and in the various occupations represents one part of our work. Another phase is the development of the dance-drama. The dance underlies the arts of music and poetry, differing from them in degree, rather than in character of expression. It has the same relation to the technical training as the games of skill and the occupations, and is, in like manner, made the basis of the motor technique. We study the histotical dances which are related to the life in the school, and the children construct their own dances when any subject of their study is so vital to them that they wish to tell a story in pantomimic action.



The story of Proserpina has been studied by the fifth grade. The children understood and interpreted it as a drama of summer and winter. They realized that the joy of the summer with its flowers and fruit, the sorrow caused by the stealing of Proserpina by Pluto, and the joyful return of Proserpina to the earth, were not things that happened only in the far-off past, but stand for the very pith of our own joy and sorrow in the change of season. They, too, love the flowers of summer. They are sad when winter drives them away, and they welcome the first blossoms of spring with the greatest glee. The children have told the story of their own experience in a dance-drama, and, in the telling, have found anew the significance of the story told so long ago. They chose the flower for the symbol in the panto-

mime because it seemed to them more significant than any other, and danced the story in this form.

1. Summer's presence, gladly and gayly gathering the flowers.
2. Summer's departure, sadly and mournfully searching for the flowers.
3. Spring's return, finding the first flower with the joy and hope of its promise.

This music (see cut, p. 53) was worked out with the class by the accompanist.

At the beginning of the fifth grade the boys and girls carry on their gymnasium work in separate classes, the boys under a man, and the girls under a woman. The work of the fifth grade described above applies only to the girls.

C. C.
E. R. F.

TIME SCHEDULE

Grade IV

Number of minutes per week devoted to the various activities:

Reading and Literature	150
Language, Composition, Spelling	110
Penmanship	75
Arithmetic	150
Geography, Nature Study, History	150
Manual Training	85
Art	70
Music	60
Physical Education	80
Recess	75
Opening Exercises	75

LITERATURE AND READING

Grade V

When children reach the fifth grade of school the mechanical difficulties in reading give them but little trouble. They have read with pleasure such books as Kingsley's *Water Babies*, and Ruskin's *King of the Golden River*. Because good literature has been given them both in school and at home a taste for good reading has already been formed to some extent. They have some knowledge of poetry through selections read and memorized in preceding years. Added to this equipment is a lively interest in stories of adventure, in the wonderful achievements of the old gods and heroes, and a keen enjoyment and appreciation of the courage, bravery, and strength which their favorite heroes display.

Hawthorne's *Tanglewood Tales* and the *Wonder Book* are given the first place of all the prose selections chosen for this year's study. The principal reason for this choice is that these stories represent the best in literature and are within the appreciation and comprehension of the children. Then, too, the adventures of Jason in his search for the Golden Fleece, of Theseus in his wonderful victory over the Minotaur are intensely interesting to our little hero worshippers. In this school year the children study Greek history, which is another reason for selecting these tales, although in choosing our literature we do not consider correlation of the first importance. Another advantage of these stories is that many of them furnish excellent material for dramatizing.

The children are eager also for stories of real life and Heidi, the little Swiss girl whose experiences in town and country are so well told in Johanna Spyri's *Heidi*, is thoroughly enjoyed. Heidi is followed with much pleasure in her wanderings over the Alm with Peter and the goats, and altogether this story makes life in Switzerland much more real. For dramatizing, too, many parts are well adapted.

Portions of *Ulysses among the Phæacians* are somtimes read,

using either the Bryant or Palmer translation. This has seemed too difficult for some classes, but other classes have been able to read selections with pleasure and profit. Lamb's *Story of Ulysses* is read in the third grade and often the children delight to recall and re-read the experiences of the "crafty Ulysses" in his endeavors to reach his home.

A number of poems are also read during the year. Each child owns a copy of *Poems Every Child Should Know*, compiled by Mary E. Burt, and several selections are chosen from this for class study. Some of the favorites are "Abou Ben Adhem," "Lucy Gray," "How They Brought the Good News from Ghent to Aix," and "Charge of the Light Brigade." The stirring rhythm, the courage, and patriotism brought out in the last two named are much enjoyed. In addition to the poems used for class study each pupil is asked to read for himself. Frequent reports are made on this reading and favorite passages read or recited before the class.

Beside the reading which the children do for themselves the teacher not infrequently reads to the class a single paragraph, a poem, or perhaps a long story. This reading may be something suggested by the school work, or it may be the teacher's way of interesting the class in some particular poem or story. Often the reading is done for the pure enjoyment teacher and pupil will have from reading a good thing together. Howard Pyle's *Wonder Clock* has been a favorite with several classes.

Necessarily the method of treatment must vary with the different selections. First of all the teacher attempts to catch the spirit of the author. She wants to be able to enjoy the literature with the children.

In beginning a story or a poem there is sufficient introduction to give the setting and arouse curiosity and interest. This is sometimes done through discussion, though more often the atmosphere is given by the teacher in a few words. If there is too much introduction, if things are told which could better be found out in the reading, the story is sure to suffer. *Tanglewood Tales* and the *Wonder Book* are approached through the Greek history. Places mentioned are located on the map. Names of characters are written on the blackboard, or their pronunciation found in the vocabulary. We try to recall enough from our study of the early Greeks to get the atmosphere we need. Then

we are ready for the story. For the first two or three lessons the children read at sight, or if interest lags or the language proves too difficult, the teacher reads. Interest must not be lost and the story must move. Later on much of the reading is done outside of class time, and selections only are read during the lesson period. After the first lesson or two on a story, a few minutes are spent at the beginning of each period discussing briefly what has already been read, reproducing portions of the story, or selecting the main points. If the children do most of the actual reading at home, much of the class period is used for this work. We believe, however, that throughout this school year a large part of the time allotted to literature in our programs should be used for reading aloud. This daily study of the finest English we can give the children enlarges their vocabularies and is the best kind of training for a correct and pleasing style of their own. Then, too, they need the practice in reading for its own sake.

In the first Hawthorne stories which are read the children often have trouble with the pronunciation or meaning of new words. Little time is taken from the lesson to teach these words, however; the correct pronunciation or definition is given by some pupil or by the teacher, in order that the thread of the story shall not be broken, and the reading goes on. Many of these words are later studied in the language or spelling lesson where the diacritical marks and the use of the dictionary are taught. The dictionary is used to some extent, however, when the children are asked to read in preparation for the literature lesson.

To help them to a clearer understanding of the story, and to teach them appreciation of good English, questions are asked as the reading goes on. These questions are few in number but should require thoughtful answers. After reading a certain part of the "Three Golden Apples" these questions were asked by the teacher: "Describe the cup which Hercules saw coming toward him over the billows. With what is it compared? Why? How does Hawthorne give you an idea of the size of the 'intolerably big giant,' Antæus? How did Hercules know that the giant had been standing there a long time?"

In almost every story there are paragraphs which the teacher reads. Much is lost if the children are allowed to blunder through fine passages which the teacher's rendering will make

clear to all. If there is dialogue, characters are assigned and the impersonators stand before the class and read each his own part. Better expression is gained by this method, and the way is prepared for dramatizing, which is often used as a means of review.

Not all the stories are studied with the same amount of thoroughness. Some are simply tasted. The teacher may have a "definitely indefinite aim," to quote Mr. Percival Chubb, and the intelligent reading of the story is all she wishes. Other selections are reviewed with a good deal of care and in different ways to bring out the points which the teacher wishes to emphasize. Sometimes the children tell the story from an outline which was made through class discussion, or by an individual. "The Dragon's Teeth" has been successfully reviewed in this way. Again characters may be discussed, good and bad qualities mentioned, and these reinforced by quotations from the text. One story is sometimes compared with another where points of similarity or contrast exist which the children will understand. Often the entire story or certain portions are dramatized, and acted without scenery and without costumes in the classroom. Last year "The Minotaur" was given with costume and scenery. It was dramatized by two members of the class after it had been studied in the classroom. (See Frontispiece.)

We never intend to keep the children so long on one story that they lose interest, although we may not have accomplished all that we had first intended. The ethics of the story are not neglected, but we try to avoid moralizing.

Poems are presented to the class as wholes. There is some preliminary talk, if necessary, to get the proper background, but the poet is allowed to tell his own story. Often it is best for the teacher to read the entire poem to the class, then, after a few questions or explanations, it may be read by the children, though there may be passages even in the second reading which the teacher again interprets. It is easy to spoil a selection by too many questions. The poet's impression should be the one left with the child without having him tell what that impression is.

In addition to the poems selected for class study the children are asked to read for themselves in Burt's *Poems Every Child Should Know*, and be prepared to read some selection to the

class. A half hour is frequently devoted to this kind of work. They are also asked to memorize selections of their own choice beside those learned by the entire class. One period each week is devoted to the recitation of memory selections. We try to have quotations learned in previous years recited often enough to keep them in mind. The children especially delight in repeating the passages learned from *Alice in Wonderland* in the third grade.

The year's work in reading and literature can be briefly summarized. We aim to give the children good literature which shall interest them, which shall present high ideals of courage, strength, and perseverance, and which shall be models of good English usage. In the teaching we try to keep alive the love for good books by moving rapidly enough to suit our impatient little readers who are always anxious to know what comes next, and at the same time to make a simple study of scenes, characters, and the development of the story, and to give a good deal of practice in story-telling. We try also to add some things worth while in the poems memorized.

M. G. P.

LANGUAGE

Grade V

Oral Language. In nearly all the subjects taught in the fifth grade ample opportunity is given for oral expression. In the reading and literature there is frequent demand for the narration of incidents and the description of characters and places. History also affords opportunity for narration, not only the simple time sequence, but also that which leads to a climax. Mathematics calls for explanation and conciseness of statement. Nature-study requires exactness in reporting observations of birds and of trees. Geography abounds in opportunities for description.

As clear expression is dependent upon clear thinking we say little about the language during a recitation, but try to make the subject clear. We do this by asking questions which require thought and careful arrangement; by choosing the essentials in the selections read from history, geography, and other studies, and by making summaries of topics.

There is some oral language work, however, which is independent of other school subjects. Every two or three weeks we have a half hour devoted to story-telling. In this period the children tell to the class stories which they have selected and studied at home. These are often given with enthusiasm and expression; frequently the author's language is reproduced. This has proved to be both a popular and a profitable exercise. In this exercise better results have been gained by speaking of the good points and choosing the best stories than by criticising the poor work. The children can be led to imitate without losing enthusiasm and interest, while adverse criticism of their oral expression often makes them self-conscious and discouraged.

In all the oral work we make rapid corrections in language when necessary, giving the word for which the child is hesitating, supplying synonyms to avoid repetition, and using some simple device to get rid of the ever recurring *and*, *but*, *so*, and *then*. If the sentences are poorly worded, we either give the correct form or ask the children to try again after thinking

through just what they wish to say. We also encourage and commend the use of new words, and insist, as far as possible, on clear and connected statements. We make much of the good English used, and often analyze it in a simple way.

To keep the interest in the different subjects the work must move with some rapidity. Therefore, the problem seems to be to work rapidly enough to hold this interest, and at the same time make distinct gains in oral expression.

Written Language. Composition. Since so much oral expression is required in the different subjects, the language period is largely devoted to written work which may or may not require oral preparation. The composition subjects are largely taken from other studies. One reason for this is that better results are obtained if written work is preceded by oral. Then, too, interest in the subject has already been aroused, which is a saving of time and also produces better results. A third reason is that the composition gives each child an opportunity to show what he has gained from a given subject and from the teacher. The teacher also has the opportunity to help individuals, as well as to test her own instruction. If the children are familiar with the subject matter and are interested in it, they will unconsciously use better English, and will also be able to give some definite attention to the form of expression.

Some of the subjects which have been taken from history and geography are The Battle of Marathon, Spartan Training, Thermopylæ, Alexander, A Visit to a Russian Village, A Boat Ride through Holland. Reproductions of parts of *The Tanglewood Tales* or studies of such characters as Jason and Theseus have proved of interest and value. In these the children often show that they have gained many new words and expressions. The dramatizing of these stories in whole or in part has been a feature of the English work. Last year *The Minotaur* was dramatized by a group of children, and the play was given with scenery and costumes. The arrangement in acts and scenes was almost entirely the children's work. In deciding upon and obtaining costumes and scenery they were helped by the teacher and other friends. Even in this the children did a great deal by hunting up illustrations showing Greek costumes, and by making numerous visits to the Art Museums. The following is an extract from the play: (See Frontispiece.)

ACT I.—SCENE 1

Place—Trozene, Argolis. In the woods.

Characters—Æthra (Theseus' mother), Theseus.

Curtain rises and shows Æthra and Theseus seated on a large stone.

Theseus "Oh, mother, you tell me my father is a great king, why do I never see him?"

Æthra "Indeed, he is a king, a good and noble king, my dear son; but a monarch has his people to care for, and he cannot spare time for his little boy nor for his wife."

Theseus "But, mother, where is my father, and why are we staying here with grandfather in Argos?"

Æthra "Your father is the great king Ægeus who rules over Attica, and we are here because your father lived here before he was called to Attica."

Theseus "Well, mother, then cannot I go to Attica and see him? Oh! I so long to see my father!"

Æthra "Your father dwells in the famous City of Athens, and you are too small to take such a journey."

Theseus "But I am growing fast, mother. Grandfather keeps my measure on the door in the Throne Room at the Royal Palace. Do come and look at it, mother, and see how fast I grow."

Æthra "Not now, my son, but I will look at it sometime. You need to grow strong as well as tall, for it requires strength for such a long journey."

Theseus "Oh, how soon do you think I shall be strong enough?"

Æthra "Why, you are only a little boy. See if you can lift this rock on which we are sitting."

(*Theseus vainly tries to lift rock.*)

Æthra "You see how it is, my Theseus, you need far more strength before you can go to Athens and tell King Ægeus that you are his son, for on the way you will meet with many dangers."

Theseus "Oh, mother, how shall I know when I have this great strength?"

Æthra "When you can lift this large stone. *Then* and not *till then* can you venture on this journey."

Theseus "And if I do lift the stone will you give me permission to go?"

Æthra "Yes, when you have accomplished this and can show me what is hidden beneath it, I promise to let you go."

Theseus "Something hidden beneath it! What can it be? I will try again and struggle till I succeed."

Æthra "Do not worry yourself about it now, for you are young, and I do not want you to leave me for many years to come, oh my Theseus."

Theseus "*Dear mother*, I do not wish to leave you, but I long so to see my father! How can I get strong quickly?"

Æthra "You must take good care of your body, and we will come here every day so you may practice. If you are patient and good, the great and good Zeus will give you your strength, my son. Be patient!"

Many chapters from *Heidi* have been dramatized and given in the classroom without scenery and without costume. Accounts of class or group excursions for the study of trees and birds are occasionally used as composition subjects. Two excursions to the Metropolitan Museum, one to study the Acropolis and the Parthenon, the other to study the Pantheon, the old Roman chariot and other objects of interest, have furnished excellent material for composition work. During the year the children study a few pictures. They are sometimes asked to write a description of a picture or tell a story which it suggests.

Our elementary school paper, *School Days*, is published every month of the school year. This gives the children an incentive to write of individual experiences, to produce imaginary stories, and to try their hand at verse-making. One of the accepted contributions is given below.

WINTER

When the snow falls from the leaden sky
And covers the woods and the hill,

When the brook that used to run merrily by
Is silent, frozen, and still,
Those are the days that the children love
For then they can skating go
And coasting down the long smooth hill
Or play in the soft, white snow.
No gentle breeze that in summer blows
Is half so dear to me
As the hoarse, bluff voice of the winter wind
As it calls to us in glee.
And children's voices answer
In joy to the wind's glad call
And a happy day in the children's hearts
Is the day of the first snowfall.

Titles of other contributions that appeared in the school magazine are "A Christmas in Germany," "The Snowman," "Enid and the Witch," "Discovery of the Hudson River," "Avalon by the Sea."

Unless the subject-matter is fresh in the minds of the children, it is necessary to spend some time in oral preparation for the written work. If the children are to do their best, they must know definitely what is required and enter on their task with a certain amount of enthusiasm. Just how much preparatory work is necessary is often a difficult question to decide. It depends very much on the knowledge of and interest in the subject, the attitude of the children at the particular hour, and the attitude of the teacher. There are always children in every class who are more quickly interested than others and who seem almost at a glance to understand what is required. The influence of their enthusiasm and knowledge, both of which become apparent in this preliminary work, is of the greatest value to the slower children.

An outline is usually given the class to guide them in the arrangement of topics. This outline is sometimes given by the teacher, sometimes it is the result of class discussion. As a rule it is placed on the blackboard for reference. Later in the year each child is often asked to make his own outline. However the outline is made it should be a simple one, rarely of more than three or four topics, including the introduction and conclusion.

Most of the compositions are short. We do not secure brevity by limiting the children to so many words or pages, but by using simple outlines, limiting the subject, and by having the class write on certain selected topics from a longer outline. Assigning the different topics in an outline to special groups has proved to be an interesting and profitable exercise in composition.

The actual writing is done either in the classroom, or at home as a part of the regular home study required. Often a subject is assigned and the children are asked to make home preparation for the writing by taking notes, reading certain references, or by making an outline. Then the writing is done in the classroom. Sometimes the preparation is made in the classroom, and the writing is done at home, and frequently both preparation and writing make a single class exercise. The compositions when finished are read aloud to the class in whole or in part, either by the teacher or the children. This part of the work is much enjoyed by all. After a composition has been read, the author is given the opportunity to make the first comment on his own work. Then the other children are asked to criticise the paper as to interest, the beginning (is it a good introduction?), the ending (does it round out the topic?), the repetition of words and phrases, clearness of statement, and adherence to facts. We insist, as far as possible, on constructive criticism, and commend the good points in each paper. Much better results are gained in written English, as well as in oral, by commending the good most generously instead of making defects the burden of the criticisms.

The criticisms of the children and the teacher are noted in writing by the authors, who are now asked to correct and improve their own work. The papers which have not been read and criticised by the children are looked over by the teacher, who indicates in red ink the changes to be made. In making these corrections and improvements the pupils are asked sometimes to re-write the entire paper, sometimes simply the parts which are to be changed. Excellent results have been obtained by returning compositions for correction a month or more after they were written.

The children are not asked to correct all their compositions. Often the papers are read by the teacher, the common errors

noted and made the subject of the next language lesson. In these lessons spelling, punctuation, use of capitals, etc., receive attention. The aim in this work is to teach the children to apply their knowledge of punctuation, and of capitals, and to make them critical of their own writing. Considerable attention is given to the form of the composition. There must be margins at the left side and at the bottom of the paper, paragraphs must be indented, and the penmanship must be the best which the children can produce with a reasonable degree of speed.

Another form of composition work which is used throughout the year is letter writing. The form of the social letter has been taught in previous grades. The arrangement and punctuation of the heading, etc., still require a great deal of drill. Most of the letters written are to real persons—members of the family away from home, school friends, or classmates absent from school. The imaginary letter is occasionally asked for. Heidi writing to Klara from her mountain home has been a favorite subject. The business letter, too, receives a good deal of attention. Last year each child wrote a letter to some business firm which required a reply. This proved very interesting and the results were excellent.

The punctuation needed in the written work largely determines the points to be taught and the drill required. The rules taught in previous years need to be kept in constant review. The new rules given are: the use of the comma after yes and no, after persons addressed, in series, and in quotations. For statements of these rules the children are referred to Buehler and Hotchkiss's *Modern English Lessons*, which also contains many exercises for punctuation.

Dictation and Spelling. In this grade a prominent place is given to dictation. For this work short fables are used, poems, words of songs, short quotations from prose and poetry, selections from geography, history, and other school subjects. Sometimes the selection is read, perhaps studied by the children. Difficult words are pointed out by the teacher or written on the blackboard and divided into syllables. Children may be asked to observe the spelling of certain words, then close their books and write these words on the blackboard or on paper. Pronunciation is studied by using the dictionary. Punctuation is noticed and explained when necessary. Then books are

closed and sentences are dictated. Often a selection is assigned for home study and dictated to the class as a spelling exercise, or it may be given for home study and written from memory. We use this method often in learning the words of songs.

For formal spelling lessons, we take words from the different school subjects, abbreviations frequently used in arithmetic and geography, proper names, and words misspelled in the written work of the class, and use also lists from the *Rational Spelling Book, Part II*, which contains the common synonyms and homonyms.

Poor enunciation and slovenly pronunciation are sometimes the cause of poor spelling. To remedy this, in assigning the lesson we make sure that children are able to pronounce all the words, frequently have words divided into syllables, and give some drill with special reference to clear enunciation. The dictionary is used in connection with this exercise, not only to teach the children the correct pronunciation and meaning of words, but also to give instruction and drill in its use.

Oral spelling usually precedes the written work. In the written spelling the words may be arranged in columns, perhaps divided into syllables; more often they are written in sentences, either dictated by the teacher or original with each child. It has been found helpful to have each child keep a list of his own misspelled words on which he is examined frequently. Spelling matches have been found to be stimulating and to give an excellent review.

Grammar. Scarcely a beginning is made in the study of grammar. That part of the English work is left for the sixth and seventh grades. The recognition of the sentence is dwelt upon until the children grasp the idea that a group of words is not a sentence unless it expresses a complete thought. Then the different kinds of sentences are taught.

The language work of the fifth grade is an attempt to give the children the drill they need in language forms, to improve oral and written expression, and to teach them how to criticise and improve their own work.

M. G. P.

ARITHMETIC

Grade V

In its power to sustain interest the arithmetic of the fifth grade may properly be placed with geography, history, or nature-study. The children come from the fourth grade with a good working knowledge of whole numbers. By a working knowledge is meant that they can read and write numbers up to billions, that they know the multiplication tables, and can add, subtract, multiply, and divide. In the fifth grade they use fractions and decimals.

The outline of the work is as follows:

Special work: Common and decimal fractions.

1. *Counting.* By 7's, 9's, 12's, etc., as a rapid review of addition and multiplication.

2. *Integers.* Oral: Rapid drill in review of the four operations. Written: Abstract and concrete problems involving the four operations. Emphasis upon proof of work, upon accuracy and rapidity.

3. *Common fractions.* Fractions classified and terms defined. Oral: Special attention to business fractions. Written: Addition, subtraction, multiplication, and division of easy fractions. Least common multiple developed and applied in addition and subtraction of fractions. Cancellation developed and applied in multiplication and division of fractions.

4. *Decimal Fractions.* Principles of decimal notation developed from the writing of U. S. money. Relation to common fractions emphasized. Oral: Reading of decimal fractions. Reduction of simple decimals to common fractions. Written: Addition, subtraction, and multiplication of decimals. Special emphasis upon decimal equivalents of the business fractions.

5. *Problems.* Concrete problems in all work of the grade. Problems may involve more than one operation. Information groups of problems.

Smith's *Grammar School Arithmetic* is used, and is followed so far as method is concerned. Young and Jackson's *Arithmetics* are used for supplementary work.

Long division being taught late in the fourth grade, and being a comparatively difficult matter with little children, needs a good deal of attention in the early weeks of the fifth year. It must be recalled step by step after the long summer holiday, and much practice must be given before the children become proficient in its use.

The essential processes which form the work of the first four years are quite as important in the fifth and, through all the development of new work, they are kept in mind by vigorous abstract drill. This drill forms a vital part of every lesson. Sometimes it is counting by 3's, 4's, 7's, or 10's up to 100's. This reviews the multiplication tables very effectively in a relatively short time. Sometimes the drill takes the form of a rapid succession of abstract problems in addition, subtraction, multiplication, or division as

$$7+9,\ 8+7,\ 15-7,\ 6\times 9,\ 7\times 8,\ 72\div 8.$$

In a five-minute exercise every child has an opportunity to recite several times and if no pupil has failed during that time, the children often clap their hands with delight and satisfaction.

Sometimes problems in addition are given, as $7+8+9+7+4$; or those involving both addition and subtraction, as $9+8-9-2=?$ A problem using addition, subtraction, multiplication, and division occasionally shows just how far the drill has been successful, and how much more is needed. Five minutes' drill of this kind tends to make the work accurate and is one of the most interesting periods in the school day. The children realize that facility in the handling of abstract numbers is of practical value, and they take great satisfaction in feeling sure of themselves.

The review is not all abstract. Much attention is given to the solving of concrete problems involving addition, subtraction, multiplication, and division. The text-book supplies problems that are interesting from a practical standpoint. They are related to other studies of the curriculum and give much valuable information.

While work in common fractions is not entirely new in the fifth year, the ideas of fractional value formed in the lower grades have to be recalled and made clear in much the same way as they were first presented. Objective work is done early in the year, and indeed at any time when it may be necessary, but we

try in the fifth year to get an understanding of fractional values apart from objects. We use a variety of means to show objectively the relations of fractions to whole numbers and to each other: one-inch cubes, rectangles drawn on the board and printed in the text-book, lines drawn, or paper folded. With lines like the following (Diagram I) the children show that $\frac{1}{2}$ is $\frac{2}{4}$

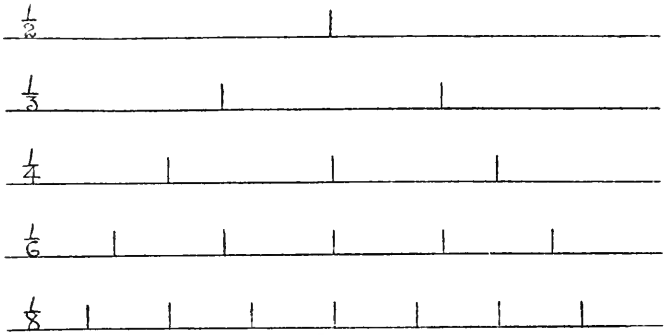


Diagram I

and $\frac{4}{8}$ and that $\frac{1}{3}$ is $\frac{2}{6}$. They draw diagrams to prove that $\frac{1}{3}$ is $\frac{3}{9}$; $\frac{2}{3}$ is $\frac{6}{9}$; $\frac{1}{2}$ is $\frac{3}{6}$ or $\frac{6}{12}$ Then they discover the principle of reducing to lowest terms and learn the abstract process.

In diagrams, such as No. II, they show $\frac{5}{4}$, $\frac{6}{4}$, $\frac{8}{4}$, $1\frac{3}{4}$, $2\frac{3}{4}$, and learn the process of reducing integers to fractions, and improper fractions to integers or mixed numbers. They

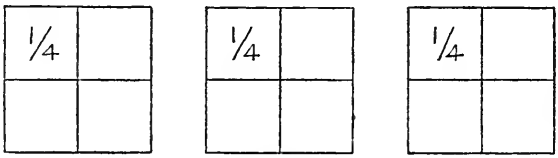


Diagram II

divide each of the 4ths into three equal parts and find that they have 12ths. Dividing each of the 6ths into three equal parts shows that $\frac{1}{3}$ of $\frac{1}{6}$ is $\frac{1}{18}$. In the first diagram they show

$\frac{1}{2}$ of $\frac{1}{3}$
$\frac{1}{2}$ of $\frac{1}{2}$
$\frac{1}{4}$ of $\frac{1}{2}$
$\frac{1}{2}$ of $\frac{1}{4}$

which readily introduces the principle of multiplication of fractions. With multiplication we use cancellation. In the addi-

tion and subtraction of fractions we work with factors and multiples, but the objective work is kept in advance of the process. When the children make drawings to show that $\frac{1}{2}$ and $\frac{1}{3}$ is $\frac{5}{6}$, and $\frac{1}{2}+\frac{1}{4}=\frac{3}{4}$, they see the need of a common denominator. Emphasis is laid upon finding this common denominator by inspection. Later on the process of finding the common denominator by means of the least common multiple is taught. Then the addition and subtraction of fractions is simple; and after reduction to a common denominator is clear the rest of the work is as easy as with integers. In all of the preceding the way has been made for division of fractions—$\frac{1}{2}$ contains $\frac{1}{4}$ twice; $\frac{2}{3}\div\frac{1}{6}=4$; $\frac{3}{4}\div\frac{1}{8}=6$. When this is shown by inverting the divisor we have little more need of objects to illustrate the problems.

All of the work is kept simple by using only the fractions common in daily life, that is fractions with denominators of not more than two figures. Just as soon as the process is clear we begin to use concrete problems.

Many of the problems in fractions serve to review and keep in mind the measures in common use Fractional parts of a foot, a yard, a quart, bushels, and gallons make problems that are related to the life and interests of fifth grade children.

The beginning of decimals seems rather simple in comparison with common fractions. It grows so naturally out of the writing of dollars and cents that at the close of the first lesson in writing and reading decimals the children usually agree that "it 's play." They begin by writing a sum of money involving cents, as \$1.25, and see readily that \$.25 is $\frac{1}{4}$ of a dollar or $\frac{25}{100}$ of a dollar. Then \$.50 is seen to be $\frac{50}{100}$ of a dollar and \$.75, $\frac{75}{100}$ and so on until the denominator 100 is seen to be equivalent to the two places for cents. Then we read decimals without money value and when the children see that the position of the decimal point means the same thing as the denominator of the fraction, they are eager to go on and learn all the decimal places. They learn to read decimals of all denominations correctly, and then drill is given upon the reading of those having not more than five places. Then they learn to change decimals to common fractions and common fractions to decimals, and in a comparatively short time are ready for addition and subtraction. In this work it is interesting to watch

their satisfaction at being able to use, in this new relation, the old processes, familiar from their work in integers and fractions.

The multiplication of decimals is apt to be rather difficult, but we again use an old process to explain a new one. The short way of multiplying by 10, 100, or 1000 is familiar, and when it is discovered that moving the decimal point one place to the right multiplies by ten, and moving it two places to the right multiplies by 100, the difficulty disappears.

This work in fractions and decimals is not carried into highly organized processes and involved problems, but the principles are learned through use in simple problems and the work is kept accurate through drill and the practice of checking results. This may be accomplished by adding the column twice in opposite directions to prove addition; by adding subtrahend and remainder to prove subtraction; by multiplying quotient and divisor in division, and sometimes by casting out 9's to prove multiplication.

Some time is given, practically every day, to oral problems. These are similar to the concrete problems given for written work, but smaller numbers are used. Usually some problems are assigned as work to be prepared at home. After the principle of the problem is clear we find it profitable to give some work to be done by the pupil alone to stimulate individual effort.

The arithmetic period is a happy one. The children are full of life and vigor. The half hour is all too short, and when it is done we all want "just one more problem."

L. D.

GEOGRAPHY

Grade V

The geography work of the fourth grade is a study of the larger physical features of North America, followed by a study of the United States by political divisions, each division being considered as to the occupations of its people in general.

In the fifth grade the larger physical conditions of Europe and Asia are considered, and the more important countries are studied as to special industrial features, relations in commerce, and national characteristics of the people.

The following outline shows the work done in the general study of Europe and Asia, and the topics used in teaching the United Kingdom as a political division. The other political divisions are studied in a similar manner.

Eurasia.

1. What it includes.
2. Position.
   - Relation to other continents.
   - Relation to Atlantic and Pacific.
3. Size.
   - Compared with other continents.
4. Coast line.
   - Regular or irregular.
   - Peninsulas.
   - Indentations.
5. Surface.
   - Highlands.
     - Himalaya Mountains.
     - Pamirs.
     - Ural Mountains.
     - Caucasus Mountains.
     - Alps.
     - Pyrenees.
   - Lowlands.
     - Great Siberian Plain.
     - Great Lowland Plain of Europe.

6. Drainage.
    - Rivers of Europe (trace course of each).
        - Rhine.
        - Rhone.
        - Seine
        - Danube.
        - Volga.
        - Elbe.
    - Rivers of Asia.
        - Hoangho.
        - Yangtse-kiang.
        - Ganges.
        - Indus.
        - Tigris.
        - Euphrates.
7. Climate.
    - Heat belts.
        - Rainfall, (study from rainfall map).
        - Heaviest.
        - Least.
        - Moderate.
8. Plants.
    - Tundra region.
    - Northern forests.
    - Trees of Southern Europe.
    - Grassy steppes and savannahs.
    - Trees of the jungle.
9. Animals.
    - Of Europe.
    - Of Asia.
10. People.
    - Of Europe.
        - Races.
        - Characteristics
        - Languages.
    - Of Asia.
        - Races.
        - Characteristics.
        - Languages.

British Isles.

1. Countries included.
2. Size.
   Compare with areas in United States.
3. Position.
   Direction from other European countries.
4. Surface.
5. Climate.
   Rainfall.
   Amount (study rainfall map).
   Temperature.
   Compare with same latitude in North America.
   Reasons for difference
6. Occupations.
   Agriculture and grazing.
   Need for agricultural products.
   What crops are raised.
   In what sections.
   Advantages for agriculture.
   Importance of stock-raising.
   Extent to which carried on.
   Conditions favorable for grazing.
   Fishing.
   Where carried on.
   Chief centers of trade.
   Why an important industry.
   Mining.
   Locate coal fields (study map showing same)
   Where iron and tin are found.
   Importance of mining industry.
   What uses are made of coal and iron.
   Manufacturing.
   Woolen manufactures.
   Leeds and Bradford the centers.
   Kinds of woolen goods manufactured.
   Advantages for manufacturing.
   What becomes of manufactured goods.

Cotton manufactures.
Manchester the center.
Advantages for manufacturing cotton goods.
Where manufactured goods are sent.
Iron and steel manufactures.
Glasgow, Sheffield, Birmingham, chief centers.
Kinds of goods manufactured.
Advantages of each center.
What becomes of manufactured products.
Linen manufactures.
Belfast the center.
Advantages for manufacturing.
How linen is made.
Where it is sent.

Commerce.
Imports.
Foods.
Raw Materials.
Exports.
Manufactured goods.
Chief ports.
Locate { London. Liverpool. Southampton. Cardiff. Hull. Glasgow.
Exports and imports of each.
With what countries does each carry on trade.
Trace most important routes on maps.

7. The people.
Nationality.
Characteristics.
Government.
Their largest city.
Other places of interest.
Their possessions shown by map.

The books which have been found most helpful and which are in constant use are Longmans's *Atlas*, Tarr & McMurry's *Europe and other Continents*, Carpenter's *Europe* and *Asia*, Dodge's *Geographies*, and Adam's *Commercial Geography*. Maps, too, are in daily use,—wall maps of Europe and Asia, both the physical and the political, and outline maps of the continents and of political divisions. Other materials brought in as occasion requires are pictures, lantern slides, samples of natural products or of manufactured goods of the different countries studied.

As the outline indicates, the aim of this year's work is to emphasize the life side of geography by studying as thoroughly as time will allow the characteristic industries of the different countries, and to give the children a general idea of the larger physical features of Eurasia. After telling the class that Eurasia includes Europe and Asia, they are asked to locate it on the world map, with which they are already familiar.

Size, surface, and drainage are taught from the map with occasional references to the text-book. After naming and locating the waters surrounding Eurasia, the class are asked to compare the coast line of Europe and Asia with that of North America as to length and character, and to express an opinion as to the location and the number of good harbors they would expect to find in Eurasia. The special advantages which Europe has for trading with all the other continents is also brought out.

In previous work the children have used the physical map but little. Some time is taken just here to teach them how to read the surface from the map and to introduce them to the use of Longmans' *Atlas*. The highlands are located, general direction noted, and highest mountains named. The lowland areas are located, and compared in extent with highland areas. It is shown from the map that the rivers of Asia flow to north, east, and south, and that most of them have their sources in the central highlands; that the rivers of Western Europe flow from the Alps in all directions, and those of Eastern Europe from the low hills in Russia.

In the fourth grade the children learned the different heat belts, and the characteristics of each. Therefore they can tell in what heat belts Europe and Asia lie, and the different temperatures one may expect to find in going from north to south.

Rainfall is studied from the rainfall map. Areas of heavy, moderate, and light rainfall are located. The way of measuring rainfall is explained. The average annual rainfall in New York is given in order that comparisons may be made with other cities and countries. The children learn from the map that in the greater part of Europe and Asia the winds blow from the west. As they blow over the Atlantic they gather a great deal of moisture. In consequence Western Europe has an abundance of rain. Farther toward the east in Russia and Asia there is little rainfall, because the winds have lost most of their moisture. By comparing the rainfall map with the physical map, the children find that the heaviest rainfall in Europe is in highland areas, and are then told the effect mountains have on rainfall.

The plants and animals found in different parts of Europe and Asia are studied, using information gathered by children from books, visits to the Bronx and other zoölogical parks, pictures, and personal experiences.

In studying the people we read from text-books and geographical readers the characteristics of the white and yellow races, locate large sections where they are found in each continent, and enumerate the different languages spoken.

Outline maps are used in connection with many of these topics. Important indentations and peninsulas are named, boundaries of different countries indicated, rivers and mountains located, and the distribution of plant and animal life shown.

This concludes the work on Eurasia as a whole. Europe and Asia are now studied by political divisions with special reference to the occupations of the people.

A very brief study is made of the physical features of the United Kingdom, using the map as much as possible. In order that children may locate places more exactly, and because of the comparisons which they are constantly asked to make, they need to know something of latitude and longitude. They are told that the distance north and south of the equator is called latitude, that the circles on the globe parallel to the equator mark the distance from the equator, that all places on the same parallel are equally distant from the equator. This is followed by drill in finding the latitude of important cities in Europe and the United States. The children are not asked to give the exact latitude, but to use the nearest parallel shown on the map.

Facts about longitude are told in much the same way. The object is to give a simple working knowledge of latitude and longitude for this year's study. The reasons for differences of temperature in similar latitudes—as between the British Isles and Labrador—are brought out through class discussion.

The general method used in studying every industry is first to get information as abundant as may be on the product itself—such as the amount produced, the character of the product,—and then to find reasons for the existence of that particular industry at that particular place. In taking up agriculture in the United Kingdom, the products are compared with those of Labrador and of our own latitude, bringing out the reasons for the differences in the one case and the similarities in the other. The need of agriculture and the importance of stock-raising can best be shown by having children find out the population of the British Isles, noting especially the population of England, and comparing the figures with those of the United States in connection with the area of each country. This also teaches them how to get information from the tables of areas and populations to which they will often be referred throughout the year.

In studying mining, comparisons are constantly made with the United States, and Great Britain's place among the five leading coal producing countries of the world is given. The number of miners in Great Britain is mentioned to show the extent of the industry, the dependence of one industry upon others, and to emphasize the demand for agricultural products.

The children of the Horace Mann School have travelled a great deal, both in our own country and in Europe, and are therefore able to give considerable information on many topics from personal experience. Often some child can tell of his visit to a coal mine or some factory in a way which proves interesting and instructive to the class.

Considerable time is spent in teaching the manufactures of the British Isles, following pretty closely the topics given in the outline. The children are required to bring to the class as much information as they are able to gather, special topics often being assigned to individual pupils. They are also asked to bring to the classroom whenever they are able articles showing characteristic manufactures. The advantages for manufacturing and the disposal of manufactured goods are brought out chiefly

through class discussions. Here, too, the dependence of manufacturing on mining and agriculture is emphasized.

If agriculture, fishing, mining, and manufacturing have been taught successfully, it will be an easy matter for the class to name the chief exports and imports, and they will be fairly familiar with the different ports and the character of their trade. This topic is largely a review of previous work, as is also the last topic—the people.

In connection with the study of London and of other interesting places in the United Kingdom, much use is made of the lantern and of photographs. Only a few slides are shown at one time, and the children are usually asked to contribute information or interesting incidents from their own experience as the pictures appear on the screen.

While the location of places has been mentioned only incidentally, it is made an important feature of the work. Not only commercial and industrial centers, but places of historical interest and of scenic beauty are located. The children are required to point out these locations on wall maps and to indicate them on blank outline maps until they become perfectly familiar with them. In the United Kingdom, for example, we hold the children responsible for a fairly exact location of the following cities: London, Liverpool, Glasgow, Manchester, and Leeds. An approximate location is required of such towns as Cardiff, Southhampton, Sheffield, Hull, Edinburgh, and Belfast.

Other important countries of Europe and Asia are studied, using the same general plan. Industries are constantly compared with those in the United States and other European and Asiatic countries already considered.

The work of the grade is reviewed at the end of the year from the standpoint of industries. Maps are made showing location of characteristic industries in particular sections of Eurasia, and conditions favorable for that industry in the localities mentioned are discussed.

M. G. P.

HISTORY

Grade V

In the third and fourth grades the geography and history are combined. In the third grade Home History is studied in connection with Home Geography. In the fourth year biographies of representative men associated with the early history of the United States are given in connection with the geography of North America. In the fifth year geography and history are taught as separate subjects. The geography is a study of Europe and Asia, the history a study of the Greeks and Romans. This work in Greek and Roman history is followed in the sixth and seventh grades by a study of mediæval history and the history of the United States.

Greek and Roman history thus takes its place in a general survey of European history as a background for a more intelligent study of American history later in the course. Special emphasis is laid upon those facts in ancient history which tend to develop an appreciation of literature and art and aid in their interpretation.

The topics considered are as follows:

Greek History Outline.

I. Oriental peoples near the Greeks.
   1. The Egyptians.
      (a) Geographical features of Egypt.
      (b) Location of Thebes.
      (c) Monuments and buildings.
          Pyramids, obelisks, temples.
      (d) Manner of living.
      (e) How we know their early history.
   2. The Phœnicians.
      (a) Location of Tyre and Sidon.
      (b) Phœnicia's great navigators and merchants.
      (c) Their manufactures.

3. The Persian kingdom under Darius I.
   (a) Extent.
   (b) Government.
   (c) Resources.
   (d) Luxury.

II. The earliest Greeks.
1. The home of their ancestors.
2. The migration into Greece.
3. Life in early Greece.
   (a) Food.
   (b) Clothing.
   (c) Houses.
   (d) Migratory habits.
   (e) Attitude of one tribe toward another.
4. What Homer tells of them.
   (a) The Trojan War.
   (b) The return of Ulysses.
5. What, according to legend, the Greeks learned from neighboring peoples.
   (a) From the Phœnicians.
   (b) " " Egyptians.
6. Difference this knowledge made in their way of living.

III. Greek colonization in the Mediterranean.
1. Reasons for sending out colonies.
2. The settlement of Chalcidice.
3. Extent and influence of colonization. (see map).

IV. Early Sparta, 750 B.C.
1. Location.
2. Character of Lacedæmon.
3. Institutions and laws attributed to Lycurgus.
   (a) Why they bear his name.
   (b) Object of these laws and institutions.
   (c) Training of the boys and girls.
   (d) Occupation of the men.
   (e) Dress.
   (f) Houses.
   (g) Food.
   (h) Money used.
   (i) Government.
   (j) Different classes.

4. Conquest of Messenia.
5. The way the Spartans treated the conquered.

V. Early Athens, 750 B.C.
1. Location.
2. Geographical features of Attica.
3. Government.
4. Trouble between the rich and the poor.
5. First written laws drawn up by Draco in 621 B.C.
   (a) Character of these laws.
   (b) Why they did not put an end to the trouble between the rich and the poor.
6. Solon and what he did for the Athenians.
   (a) What we know of Solon before he was made legislator in 594 B.C.
   (b) Object of the reforms he introduced.
   (c) Some of the measures proposed by him.

VI. The bonds which held the Greeks together.
1. Blood relationship.
2. Common religion.
3. Common language.
4. The oracles.
5. National games.
   Olympian games.
   (1) How often held.
   (2) Different contests.
   (3) Influence of games.
6. The works of Hesiod, Sappho, Pindar.

VII. The wars with Persia.
1. Territory held by Greeks.
2. Darius's kingdom.
3. Cause of Darius's anger against the Greeks.
   (a) Revolt of Ionian cities.
   (b) Burning of Sardis.
4. First Persian expedition against the Greeks.
   (a) Preparations made at Athens for defence.
   (b) Route taken by Persian forces
   (c) Disasters of the march.
5. Second Persian expedition against the Greeks.
   (a) Demands made by Persians.

(b) Preparations for this expedition.
(c) Route chosen.
(d) Preparations made by Greeks for defence.
(e) Battle of Marathon, 490 B.C.

6. The conflicting measures proposed by Aristides and Themistocles.
7. Third Persian expedition against the Greeks.
   (a) Extensive preparations made by Persians.
   (b) Route chosen and its difficulties.
   (c) Crossing the Hellespont.
   (d) Preparations made by Greeks for defence.
   (e) Battle of Thermopylæ, 480 B.C.
   (f) Destruction of Athens.
   (g) Battle of Salamis.
   (h) Battle of Platæa.
8. Effect of the war upon the Greeks.

VIII. The re-building of Athens, 479–461 B.C.
1. Fortification of the city.
   (a) City walls built.
   (b) Piræus surrounded by wall.
2. Ostracism of Themistocles.
3. Athens the head of the Delian league.
   Persians driven from Ægean Sea.
4. Cimon adorns the city.
5. The great sculptors and poets.
   (a) Myron.
   (b) Æschylus.

IX. Age of Pericles, 461–431 B.C.
1. Ostracism of Cimon.
2. Building of the Long Walls.
3. Athens and her allies.
   (a) Ægean sea now an Athenian lake.
   (b) Allies pay tribute to Athens.
4. Thirty years' truce between Athens and Sparta.
5. Government.
   (a) Power of the archons.
   (b) Assembly.
   (c) Power of the generals.
6. Funds of the Delian league used to make Athens beautiful.
   (a) Theseum.

(b) Parthenon.
(c) Propylæa.
(d) Erechtheum.
(e) Odeium.

7. Home life of the Athenians.
8. Some of the great men of Athens: Pericles, Herodotus Phidias, Socrates.

X Civil wars in Greece, 431–413 B.C.

1. Peloponnesian War.
   (a) Allies of Athens and Sparta shown by map.
   (b) Causes of the war.
   (c) Spartans invade Attica.
   (d) Athenians attack coast of Laconia.
   (e) Plague at Athens.
   Death of Pericles.
   (f) Surrender of Platæa, 427 B.C.
   (g) Expedition against Sicily led by Alcibiades.
   (h) Athenians defeated at Ægospotami.
   (i) Terms of peace.
   (j) Government of the Thirty at Athens.
   (k) Sparta supreme in the east.
2. Thebes attempts to gain supremacy.
   (a) Battle of Leuctra.
      (1) Tactics of Epaminondas.
      (2) Spartans defeated.
   (b) Battle of Mantinea.
   (c) Results of this battle.
   (d) Thebes and allied states shown by map.

XI Rise of Macedon.

1. Geographical features of Macedon.
2. The Macedonians.
   (a) Homes.
   (b) Dress
   (c) Habits.
3. Philip's education in Thebes.
4. Philip makes Macedon strong.
   (a) Military reforms.
   (b) Annexation of coast cities.
   (c) Opening gold mines.

5. Conquest of Greece.
   (a) The Sacred War.
   (b) Demosthenes's opposition to Macedon.
   (c) Battle of Chæroneia, 338 B.

XII. Alexander's Empire, 338–146 B.C.
1. Alexander's boyhood.
2. Suppression of rebellion in Greece.
3. Conquest of Persia.
   (a) Size of army.
   (b) Battle on the Granicus.
   (c) Battle of Issus.
   (d) Siege of Tyre.
   (e) Founding of Alexandria.
   (f) Battle of Arbela.
4. Alexander becomes Emperor of Persia, 330 B.C.
   (a) Further conquests and explorations.
   (b) Improvements in government of Empire.
   (c) Re-organization of army.
   (d) Building of an immense fleet.
5. Extent of Empire shown by map.
6. Breaking up of Empire.
   (a) Death of Alexander, 325 B.C.
   (b) Empire divided.
   (c) Greece conquered by Rome, 146 B.C.

XIII. Influence of Greek civilization on subsequent life.

ROMAN HISTORY.

I. Early Rome, 753–509 B.C.
1. Geographical features.
2. What the Romans thought of their early history.
   (a) Founding of the city.
   (b) Stories of the kings.
3. How the Roman people lived.
4. The growth of the city.

II. Rome as a republic.
1. The government.
2. The plebeians and what they wanted.
3. Some famous battles and leaders.

(a) Lake Regillus.
(b) Sack of Rome by Gauls.
(c) Cincinnatus.
(d) Candine Forks.

4. War with Pyrrhus.
5. Rome mistress of Italy (map), 266 B.C.

III. Rome and Carthage.

1. Carthage and her people.
   (a) Location.
   (b) Founding of the city.
2. Strength of Rome and Carthage compared.
3. First Punic War.
   (a) Causes—direct and indirect.
   (b) Building of Roman fleet.
   (c) Battle of Mylæ.
   (d) Regulus in Africa.
   (e) Terms of peace.
4. Second Punic War.
   (a) Cause.
   (b) Career of Hannibal—Victories and final defeat.
   (c) Conditions of peace, 202 B.C.
5. Third Punic War.
   Destruction of Carthage, 146 B.C.
6. Extent of territory under Roman rule (map).

IV. Rome extends her conquests.

1. War with Macedonia and Greece.
   Occasion and results.
2. War with Antiochus and Mithridates.

V. Civil strife in Rome.

1. The Gracchi.
2. Marius and Sulla.
3. Cæsar and Pompey.

VI. Rome as an empire, 49 B.C.–14 A.D.

1. The work of Julius Cæsar.
2. The second triumvirate.
3. The reign of Augustus.
4. Roman life in the days of Augustus.
   (a) Homes.
   (b) Dress.
   (c) Schools.

(d) Writers and books.
(e) Buildings.
(f) Life of the Forum.

5. Extent of empire in 14 A.D.

VII. Influence of Roman civilization on subsequent history.

In teaching these topics we have several aims in view: first, to give a simple chronological and historical account of certain events; second, to make such names as Themistocles, Pericles, and Cæsar mean something; third, to give some knowledge of the past in order to make comparisons with the present; fourth, to awaken interest in books on history and teach how to use them; fifth, to gather and arrange historical material in a simple way; sixth, to make prominent the æsthetic, intellectual, and literary side of Greek life, and the governmental and legal side of Roman life.

Of the many books on Greek history the following have been found particularly helpful to the teacher: Holm's *History of Greece*, Botsford's *History of Greece*, and West's *Ancient History*. Other books are often used for special topics. The text-book used by the children is Guerber's *Story of the Greeks*. Other books in the classroom library which the children read in connection with special topics are: Morris's *Historical Tales*, Harding's *Greek Gods, Heroes, and Men*, White's *Plutarch for Boys and Girls*, Church's *Stories of the Persian War*, Church's *Stories of the Old World*, White's *Herodotus for Boys and Girls*.

The teacher reads to the class from Plutarch, Herodotus, Thucydides, Bryant's Iliad, Palmer's Odyssey, and Church's *Greek Stories*. The Iliad and the Odyssey are made a part of the literature course. Pictures of scenery and of buildings, of gods, heroes, and great men are in constant use. Maps, too, are used in almost every lesson. Lantern lessons are given dealing with the mythological period, and illustrating the beauties of Athens in the age of Pericles. An excursion is also made to the Metropolitan Museum of Art to study the Acropolis and the Parthenon. To impress still further the glory of this ancient city each child mounts in a book ten or more blue prints of Athens and her great men.

The Greek history outline is given with considerable detail, and only certain topics illustrating the method of teaching will

be described. It should be remembered, however, that all the topics are taught in a simple way.

TOPIC I. ORIENTAL PEOPLES NEAR THE GREEKS

On the world map the children locate the Mediterranean Sea. They do this easily as they have studied the world as a whole in the fourth grade. Then Egypt, Phœnicia, Persia, and Greece are located. After telling the class something about the valley of the Nile and locating Thebes, the home life of the Egyptians is described, and selections read from Maspero's *Ancient Egypt and Assyria.* The discussion of the topic "How we know the early history of the Egyptians" brings to the attention of the class the pyramids and obelisks, and in a simple way shows how historical information is obtained from these relics of ancient peoples. The children know something of the Phœnicians from their study of Early Trade and Discovery in the third grade. The topics in the outline add little that is new, but are sufficient to show the marked characteristics of the people.

Phœnicia and Egypt influenced Greece in her very early history, but Persia does not enter into Greek life until a later period. Therefore, the Persian kingdom under Darius I is given quite fully in order that later on intelligent comparisons may be made between the Greeks and the Persians.

To get the atmosphere of the past we contrast life in each of these three countries with the present, and try to form some idea of the limited knowledge one country must have had of another. This topic is the introduction to the history of Greece. It is taught to give certain knowledge of the countries which influenced Greece the most, and to create in some degree the atmosphere of the past.

TOPIC II. THE EARLIEST GREEKS

The southern part of Russia is located on the map as the home of the ancestors of the earliest Greeks. The migration into Greece is described by the teacher, and selections dealing with the subject are read to the class.

In order to understand life in early Greece the geographical features must be studied. These are taught from maps and from Tarr and McMurry's *Geography,* which is the text the children

use in their geography work. This study of Greece should bring out the fact that sea and mountains protected the country from invasions, while fine harbors encouraged intercourse with other countries. Some good accounts of life in early Greece are read to the children. This is followed by a discussion in which the Greeks are compared with the North American Indians. The sources from which we get our knowledge of ancient Egypt have already been discussed in a simple way, and now the children are eager to learn how we know so much about the Greeks. They are told that we get much of our knowledge from the old myths and from the Iliad and the Odyssey; that the Iliad and the Odyssey are very old books which people read to-day; that for a long time they were supposed to have been written by one man, but now are thought to be the work of many. The children then read the chapter on Homer in Guerber's History, and the teacher supplements this by reading an account of Homer and the Epic Age from Botsford or some other standard historian.

The first topic assigned to the class for study is the "Story of the Trojan War." This is done by giving the children a brief outline:

(1) The cause of the war. (2) Muster of the troops. (3) The delay at Aulis, etc. They are asked to prepare to tell the story following the topics. In connection with these lessons, or after they have given the account as fully as they are able, the teacher reads to them from Bryant's Iliad. Most of this reading is done as literature and is much enjoyed. Selections from Palmer's Odyssey are also read, and found even more delightful than the Iliad. Often the children read in both these books for themselves. Many of the Hawthorne stories given in the literature course correlate with this early history.

The next topic studied by the class is, "What, according to legend, did the Greeks learn from neighboring peoples?" The children know from their study of Guerber the stories of Inachus, of Acrops, of Cadmus. Then follows a discussion as to the probable truth of these myths, which always proves most interesting and helpful to both teacher and pupils. The influence which this intercourse with Phœnicia and Egypt had on the daily life of the Greeks is brought out in class discussion, comparing, point by point, (1) Food, (2) Clothing, (3) Homes, Habits.

TOPIC III. GREEK COLONIZATION IN THE MEDITERRANEAN

In the third grade the children learned that New York was a colony settled by the Dutch. In the fourth grade they studied the lives of Winthrop and Bradford. Therefore they know that the English and Dutch sent out colonists. They learn, too, from this year's geography study that the United Kingdom has many colonies at the present time. All this makes Greek colonization so many years ago especially interesting. We attempt to get from the children not only the names of the colonies which they have studied, but the reasons why they were sent out. Then the reasons for the settling of Greek colonies are considered. Most of this must be given by the teacher, though the children are allowed to suggest probable causes which are discussed by the class. The reasons given for the settling of Greek colonies are: (1) The Greeks on the west coast were mariners fond of adventure. (2) Greek love of freedom led them, if oppressed, to seek other homes. (3) Cities sent out colonies for trading purposes. The organization of a colony is explained and the history of the planting of Chalcidice is followed to make the work more vivid and interesting. The extent of Greek colonization is shown on the map with the view of giving the children some conception as to how the influence of Greek culture came to be so widespread.

TOPIC IV. EARLY SPARTA

Guerber's *Story of the Greeks* gives a great deal on this topic. So considerable time is spent in teaching the class how to use a text-book. At first topics are written on the blackboard and chapters and pages are given. After a few lessons the children are required to find information for themselves through the index and titles of chapters. The teacher studies with them in the beginning, but very soon topics are assigned for home study. Special topics to be looked up in particular books in the class-room library are sometimes given to individuals. This is frequently done later in the year. Selections from Plutarch's "Lycurgus" are read to the class. This is the beginning of an acquaintance with this ancient writer which continues throughout the year. The children are told something of Plutarch, and that Plutarch's "Lives" is one of the sources of information

used by historians. Experience proves that they are always much interested to know what Plutarch says of the great men of Greece and Rome. This topic furnishes excellent material for composition work. "The Training of Spartan Boys," "Aristomenes's Attempt to Free Messenia" are two subjects which have been used with good results. An oral review followed by a few written questions concludes the work on early Sparta. The written questions require brief answers, but are intended to bring out the essential points.

TOPIC V. EARLY ATHENS

The history of early Athens is much more difficult to understand than that of Sparta. Therefore the teacher must give to the class practically all the information which the topics demand. Each one is treated in a very simple way. Solon's laws are considered as attempts to improve the condition of the poor and only a few are mentioned. The contrasts between Athens and Sparta are brought out point by point and the advantages of each state discussed.

TOPIC IX. AGE OF PERICLES

Time enough is spent on this topic to make it apparent that the Athenians at this period were prosperous, enterprising, and highly cultured, and that Athens was a very beautiful city. The rebuilding of Athens is taught as an introduction to this most glorious period of Greek history. The children get as much information for themselves as possible from Guerber, and from books at home and in the class-room library. The teacher reads to them from Plutarch's "Pericles," and supplies as much additional information as is needed to give a picture of Athenian home life. The home life of the Athenians of Pericles's time is contrasted with life in early Athens, and also with our own home life.

Pictures and lantern slides of the Parthenon, and the Erechtheum, are studied to show the beauty of the city. The class visits the Metropolitan Museum of Art to see the models of the Acropolis and the Parthenon. This excursion has proven to be of great value not only for the information the children get, but also for the interest which it arouses in Greek life.

Last of all, the lives of the great men of this period and

what they did for Athens are considered. This gives an opportunity to bring out the patriotism, enterprise, and education of the Athenians, and to compare the great men of Athens with the great men of modern times. It is also easy to show in a simple way that the people of to-day owe much to the Athens of Pericles.

The general method used can be summarized briefly. The children are taught to use a text-book, and to look up references in other books, topics and pages being given. They are taught to make outlines of large topics, the Persian wars and Alexander's conquests furnishing particularly good material for this kind of work. Some topics are given entirely by the teacher, for others the children gather nearly all the information needed. The teacher often reads to the class from modern histories and from original sources. Maps are used in practically every lesson. Pictures, too, are often placed before the class for study and enjoyment. Some half dozen or more important dates are memorized. Biographies of great men are studied to bring out Greek characteristics. Frequent reviews are given, both oral and written, and many composition subjects are taken from the history. The lesson often takes the form of a discussion, if the children have sufficient knowledge to talk intelligently. Questions from the class are always welcomed. Comparisons are made between the past and present and the fact is emphasized that we of to-day owe much to the old Greek civilization.

The method used in teaching the history of Rome is essentially the same as that which has been described for the teaching of Greek history.

M. G. P.

NATURE-STUDY

Grade V

Before the child reaches the fifth grade he is familiar with many of our common birds and trees, the interest in both having been aroused in the primary grades. He is now ready for a more extensive and at the same time intensive study of these subjects, with especial emphasis upon their relation to man. In this grade, as in fact in all others in the elementary school, three aims are prominent: (a) to give general acquaintance and interest, (b) to develop habits of careful observation and reasoning, and (c) to give some useful knowledge concerning common natural things as they affect "human interests."

The time allowed is about one hour a week (three twenty-minute or two thirty-minute periods), although much is done in addition to this out of school.

Trees. The work on trees is begun early in the fall and is based on the following outline:

I. Forest Culture.
   - a. Need of forestry.
   - b. History of forestry.
   - c. U. S. Reservations.
   - d. Forest Service.
   - e. Forester's duties.
   - f. Uses of timber.

II. Life of a tree.
   - a. Parts.
   - b. Food.
   - c. Breathing.
   - d. Structure of wood and growth.
   - e. Reproduction and cultivation.

III. Trees in a Forest.
   - a. Various requirements.
   - b. Rate of growth.
   - c. Reproductive power.
   - d. Pure and mixed forests.

IV. Life of a Forest.
   a. Beginning of crop.
   b. Struggle for existence and survival of fittest.
   c. Natural pruning.
   d. Enemies.
   e. Culmination of growth.

The beginning of the study of "Forest Culture" is taken up in connection with geography. The influence of forests upon streams is discussed as well as their tendency to prevent floods and drought and thus protect agriculture. This makes clear the importance of forests, shows why they should not be recklessly destroyed, and explains the necessity of organizations such as the United States Forest Service. The children are given some idea of the nature and scope of the work of this body, and some of them, through study or travel, know something about the German forester and can tell something of his work.

The uses of timber are also emphasized. Our dependence upon wood for fuel and upon lumber for building is not a new thought to the children, but they have little appreciation of the greatness of our indebtedness to the products of the forest until their attention has been called to innumerable things in our modern civilization that owe their present advanced condition to the use of lumber—such as our cities, our railroads, our steamship lines.

While the above lessons have been given, the pupils have been collecting the fruits, leaves, and branches of the trees and each child has not only the pressed leaf, but a picture of the leaf, flower, and fruit of each tree. The Manual Training Department could assist here in the making of leaf presses.

The "Life of a Tree" proves a most interesting topic. The functions of the roots, the trunk, and the crown are studied. How the tree gets its food, how it breathes, how it grows, are questions that are discussed in an elementary way. Simple experiments, such as covering a plant with a bell jar, show the pupils that the roots take up more water than the plant requires and that this water is disposed of by evaporation from all parts above ground. This leads up to the general topic of tree transpiration and its effects. Drawings and sections

shown under the microscope give a vivid idea of wood structure.

The reproduction of trees, while touched upon in the fall study, properly belongs to the springtime when the window-box is used to illustrate the two methods, that of reproduction from seeds and from sprouts. The fact that seeds are disseminated by means of the wind and water, by birds, squirrels, fur-bearing animals, and by people is brought out through discussion.

"Trees in the Forest" appeals to the child as no other topic in the course does, for here the life side is most noticeable. The various requirements of the trees are noted. Comparison is made of trees growing on the north side of a slope with those on the south side; of those growing in the heart of the forest with those on the margins; of those on a dry slope with those in a wet meadow. In the study of the tree's struggle for existence the child realizes fully that a tree is a living thing, and the stronger and more perfect, the greater its opportunity in the life of the forest.

The difference between our local woods and a real forest can be brought out by some personal experience of a traveller or by stereopticon views of our great reservations. Here statistics are useful. This general work on "Forestry" is followed by a somewhat detailed study of our native trees. The results of the study are:

1. An insight into some of our civic problems.
2. An increased knowledge of each tree and its use.
3. An interest in the life side of a tree.
4. Less of the ruthless destruction of our trees whose foliage and flowers beautify the landscape.

Birds. The tree work is followed by the regular bird study, although the fall migrations have been noticed and constant reference has been made to the early winter birds.

The following outline has been the basis for the work for three years:

Birds—Autumn, winter, and spring—parallel with studies of trees: (a) Study living and mounted birds in schoolroom in order to give acquaintance with general form, parts, and uses of the body. (b) Field studies of common birds—identification, movements, migration, food, records of observations. Individual work should be stimulated. (c) Studies of habits of

young chicks and ducks. (d) If possible, class should visit Zoölogical Park to observe some of the striking modifications of birds in adaptation to habits of life. (e) Economic relations of some common birds; value of our domestic birds; bird protection by special societies and laws; birds for decoration.

The class work begins early in the year with some discussion of the main topic, "Birds in their Relation to Man." Here we attempt to draw together and organize the facts based on the experience of pupils of the class and at the same time show them that birds are worth studying. This introduction does not fail to arouse great interest, and thus a good start in bird study is made. A small proportion of the time is given to this introduction, but it is strongly emphasized throughout the course when the habits of each bird are studied. The result is that the pupils realize the beneficial relation of the birds to agriculture, the important service they perform as scavengers, and the much needed protection of our game and song birds.

The injurious relation to man must of course be mentioned. Here arises opportunity for the cultivation of good judgment on the part of the pupil when he is allowed, after carefully weighing both sides, to decide if the destruction of certain birds is justifiable.

The introduction is followed by some study of bird structure, which is needed for field work and for identifying birds. In this work live pigeons and parrots, stuffed birds, bird skins, skeletons, and charts are used. The chief external parts of the bird's body are studied for their uses.

During the autumn and winter blackboard records are kept of individual observations of fall migrations and winter birds. These can never be accurate because they are made by untrained observers in various places. All reasonable ones are accepted for the sole purpose of arousing and keeping alive the interest in the study and encouraging outdoor activity.

Sections of the class under the guidance of the teacher make excursions, often before school in the morning, to Central Park where careful observations are made. Twenty-seven different kinds of birds have been accurately identified in a single morning. Strong emphasis is placed upon accuracy, and doubtful observations reported to the class are noted on the blackboard as demanding more evidence.

Constant reference is made to a set of colored pictures, arranged for the purpose of easy inspection, as a frieze around the room. These are placed in the order of the spring arrival of the birds. Stuffed specimens such as are not available at Teachers College are loaned by the Museum of Natural History, giving a more intimate knowledge of the coloring than can be obtained from the bird in his native haunts or from even the best colored plates.

Certain bird games have been tried for the purpose of testing the memory and familiarity with the subject. In one game where seventy-two birds were to be identified in a given time from stuffed specimens and pictures, more than two-thirds of the class knew half the number and one pupil knew sixty-seven of the seventy-two.

That the interest and active work often continues after the pupil leaves the fifth grade is shown by the collection of old nest eggs, and other interesting materials brought in by former pupils of this grade. A few years ago, at the suggestion of some of the enthusiastic pupils, a Nature Club was formed in order that the work begun in the fifth grade might be continued. The club at present has twenty members from the high school and upper grades. The meetings are held twice a month and many very good papers written by the members have been read and discussed. The class-rooms and specimens at the Museum of Natural History have been kindly opened to the Club, and much interesting and profitable work has been done there. Every applicant for membership must write an original paper showing some knowledge of birds. That the Club has a waiting list of nearly one dozen children testifies to the continued interest in this study.

The bird-work offers excellent opportunity for correlation with art, language, and literature. Selections from John Burroughs, William J. Long, and Florence Merriam have been used in the reading lessons (not as nature-study). The following poems have been found helpful, many of them having been memorized by the class: Bryant's "Robert of Lincoln"; Thaxter's "Robin" and "Sandpiper"; Drake's "Mocking-bird's Song"; Carey's "Blackbird"; Coolidge's "Discontent"; Longfellow's "Birds of Killingworth" and "Birds of Passage"; Holland's "Life in the Nest"; Lowell's "The Nest"; Larcom's

"Brown Thrush," "Snow Bird," "Birds with Bosom Red"; Van Dyke's "Veery," "Song Sparrow," "Maryland Yellow Throat," "Whip-poor-will."

During the year, snails, slugs, tadpoles, fishes, lizards, ants, caddises, and moths are kept in the class-room for observation and occasional lessons. This results in individual observations, many long tramps through marshes and meadows, and the collection of valuable material.

The chief object in the study of birds, trees, aquaria and vivaria is to emphasize the relation which animals and trees bear to man, to impress upon the child's mind that they have a life work, and to create a sympathy and a deeper feeling which will result in personal protection. Besides this we feel that one of the most important results of the work is the constant training in accuracy, not only of eye and ear, but accuracy of statement, which affects all other branches of study in this grade. Here is certainly something of practical value in the nature work of the present day.

Bibliography. The following list of books and pamphlets has been found especially helpful:

Study of Trees. Huntington. (Knight & Millette.)
Our Native Trees. Keeler. (Scribners.)
Trees of New England. Dame and Brooks. (Ginn & Co.)
Primer of Forestry. Pinchot. (U. S. Dept. Agriculture.)
Among Green Trees. Rogers. (A. W. Mumford.)
Birds in their Relation to Man. (Weed & Dearborn.)
Bird Life. Chapman. (Appleton.)
Bird Homes. Dugmore. (Doubleday & McClure.)
First Book of Birds. Olive Thorn Miller. (Houghton, Mifflin & Co.)
Second Book of Birds. Olive Thorn Miller. (Houghton, Mifflin & Co.)
Bird Life Stories. Weed. (Rand, McNally & Co.)

Many helpful bulletins are issued by the Department of Agriculture. The following have been successfully used by the pupils: "Four Common Birds"; "Birds as Weed Destroyers"; "Food of Nesting Birds."

L. B. U.

MANUAL TRAINING

Grade V

The study of the domestic occupations of the pioneer colonial home in the preceding year leads directly to the work in this grade and forms a basis for comparison. In the fourth grade the situation presented is that of the independent household where almost all, if not all, the work of production and manufacture is accomplished by the different members of the household, the men building the houses, raising the crops, and caring for the cattle; the women attending to the preparation of food, spinning, weaving cloth, and making clothes.

In the fifth grade the picture of a later stage is presented, when the size of settlements had increased, and villages and towns had developed. Under these conditions it was not possible for each household to produce all it needed, and so it came about that one set of people raised the raw materials while another set converted them into commodities for exchange or sale. This was still the period before the introduction of power and machinery, and the time when handicraft was the method of production. Exchange was at first very direct, and largely a matter of barter. It was almost purely a local affair, where the buyer went not to a merchant but directly to the individual who produced the article desired, he being both producer and merchant combined. These ideas are presented to the children in class discussions. Much of the development they are able to trace from their past study. The emphasis is placed more than it has been heretofore on the relation between production and consumption.

The actual constructive work of the grade deals to a large extent with certain forms of handicraft which involve distinct artistic possibilities, usually pottery or basketry. The children come to this grade with some knowledge and experience in both these subjects. In fact many of the processes are the same as they have worked out in a crude way in the earlier grades.

It is, therefore, possible for them to direct their efforts to the making of articles having artistic merit in form, proportion,

color, and design. Both woven and coiled baskets are made, and reed and raffia form the principal materials used. If the children are not already familiar with these materials, facts about the sources from which they are obtained, and their manner of growth and preparation for use, are taught.

The woven baskets are either entirely of colored reed, or have spokes of flat reed woven with raffia. The wicker and twined weaves are both used in making the baskets, and the braided and rope borders in finishing off the tops. Methods of making and fastening on covers, as well as braided and

Woven Baskets

twisted handles, are also considered. Before making a basket the children design (within certain limitations) and cut from paper the shape to be made, and plan the placing of any decoration which is to be used. This consists either of bands woven of a different colored reed, or some simple spotted or striped effect to be produced by the twined weave. When working the children have their patterns constantly before them, take all their measurements from them, and approach them in results as nearly as they are able.

The control of material, and the ability to produce the particular form desired, are the ends in view in this work. The first baskets made are necessarily unsatisfactory because in these first attempts technical processes must be learned as well as skill in manipulation.

Coiled baskets may assume several different forms, the most common being those made of the Lazy Squaw, Navajo, or similar stitches. As in the woven baskets, the children design both the shapes and the decoration, which may assume the form of bands or spots of a different color from that of the main part of the basket. In the latter great variety is possible.

Pottery is carried on in much the same way as basketry. Facts about the composition of clay, the sources from which the material is secured, the form in which it is found, its preparation for use, and its characteristic qualities are taught. Clay is always an intensely interesting material to children, and as a rule the average fifth grade boy and girl knows more about it

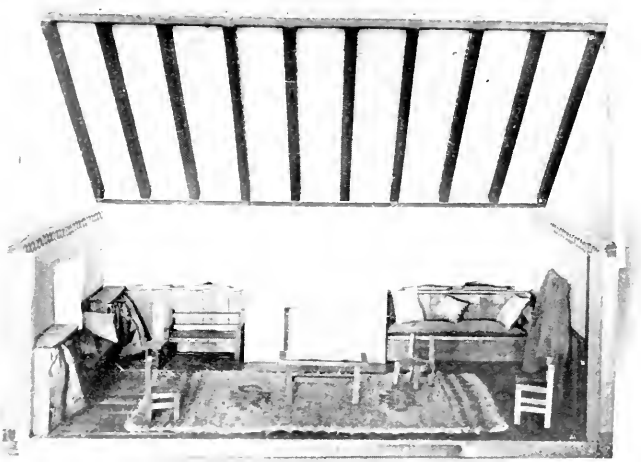
Pottery

than he is given credit for. By simple processes of hand-building, fern-dishes, trays, bowls, candlesticks, vases, tiles, and various other useful articles are made and decorated both with incised designs and by the application of color, either in the form of slip or glaze. At first the children are limited to perhaps one shape for a single piece. The size and proportion may be left to them, after a few suggestions have been made by the teacher. Later more liberty of choice is allowed, and still later th y work from forms which they have designed in the art class. The pattern for bands and borders are also worked out there, and color schemes suggested.

Before the first biscuit-firing takes place, the subject of "firing" is discussed, and the children see the kiln, and learn

about its workings. Groups assist in stacking the kiln, taking turns until each child has had some experience, and then all the children see the kiln again during the firing. They learn at what temperature the clay is fired, how long a time is required, and the system of cones used in determining these points. Mixing and applying the glaze or slip is always an interesting feature of pottery work. The former involves some vigorous exercise, and some good experience in careful weighing.

Later in the year the children experiment with a potter's wheel, and have opportunity to see a good demonstration of it's



Living Room

use by an expert potter who comes to the school and works before them. They also see a demonstration of the making of a piece of pottery in a mould, and the process of making a plaster cast. When possible, a large pottery is visited so that the children may see the machinery by means of which much of the modern ware is produced. With this consideration of pottery as a present-day industry the subject comes to an end.

In the latter part of the year the boys and girls are divided, the girls taking up sewing, and the boys woodwork. Their interests, however, are still centered in the accomplishment of

one piece of work, that being the building of a house consisting of several rooms, and furnishing the same. The building represents simple frame-house construction, and carries forward the development of types of shelter under consideration. The furnishing presents many opportunities for artistic expression, and the application to other materials of principles used during the year's work. Problems of design, of proportion, and of color are considered and worked out by the children. The boys, of course, do the woodwork in connection with the problem, while the girls make the curtains, draperies, pillows, scarfs, and rugs. When there is not sufficient time to build the entire house, a single feature, such as a room, is sometimes chosen and executed. (See illustration, p. 103). This, however, is done only after the house and its construction have been discussed as a whole.

L. H. W.

TIME SCHEDULE

Grade V

Number of minutes per week devoted to the various activities:

Language Composition Spelling	150
Literature and Reading	90
Penmanship	45
Arithmetic	125
Geography	100
Nature-Study	60
History	80
Manual Training	90
Art	70
Music	60
Physical Education	90
Recess	75
Opening Exercises	75